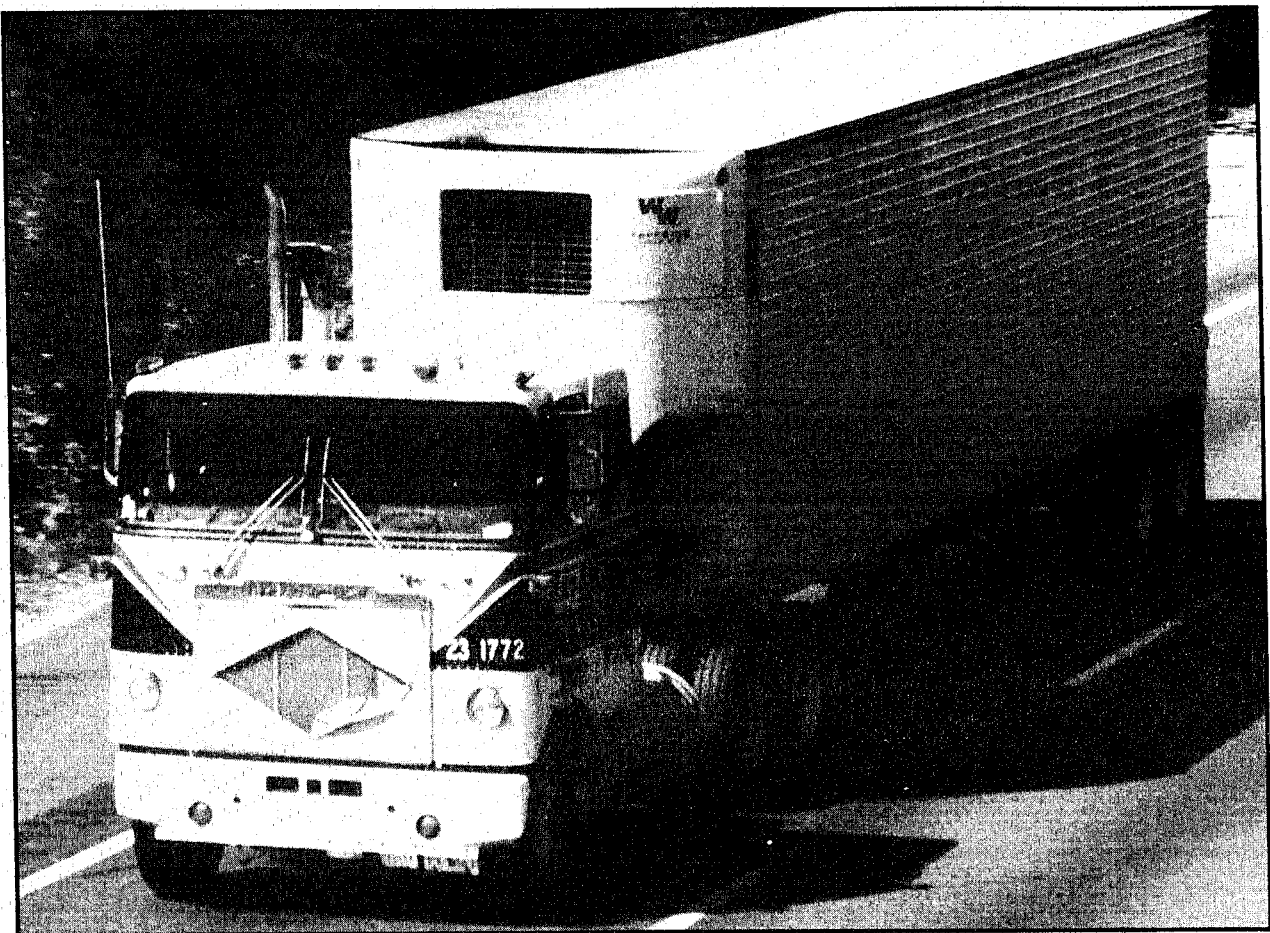




U.S. Department
of Transportation
**Federal Highway
Administration**

Accidents Reported by Motor Carriers of Property 1990

Office of Motor Carriers



Publication No. FHWA/MC-93/011

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Accidents Reported by Motor Carriers of Property 1990

Publication No. FHWA/MC-

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Prepared for

**Office of Motor Carriers
Federal Highway Administration
U.S. Department of Transportation
Washington, D.C. 20590**

November 1992

OMC/FARS TRUCK ACCIDENT STATISTICS 1981 TO 1990

The table below presents the most complete data available on accidents involving commercial trucks. The data from the Office of Motor Carriers (OMC) are compiled for all accidents (fatal, injury, and property damage only) involving trucks in *interstate* travel, and only those accidents reported to OMC by the carriers and operators of the trucks as outlined in Federal regulation (49 CFR 394). The data from the National Highway Traffic Safety Administration (NHTSA) are from the Fatal Accident Reporting System (FARS), which consists of all fatal crashes occurring nationwide as compiled from police accident reports and reported by States to NHTSA. Truck-involved crash data pertaining to those trucks in both *intrastate* and *interstate* travel are included in this table. The FARS uses the following definition of trucks:

- Medium/Heavy Truck—Any straight truck or combination truck with a gross vehicle weight rating (GVWR) of more than 10,000 pounds.
- Combination Truck—A bobtail tractor or any truck or tractor pulling any number of trailers.

OMC/FARS Ten-Year Truck Accident Statistics										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
OMC STATISTICS										
FATAL ACCIDENTS	2,181	1,978	2,031	2,195	2,161	2,101	2,410	2,675	2,642	2,619
FATALITIES	2,810	2,456	2,528	2,721	2,646	2,616	2,907	3,309	3,451	3,309
INJURY ACCI- DENTS	17,082	16,354	16,022	17,792	18,135	15,084	16,734	18,504	19,556	19,533
INJURIES	28,533	26,117	26,692	29,149	28,888	25,106	28,018	31,295	34,653	34,348
PROPERTY DAMAGE										
ACCIDENTS	8,519	8,669	7,979	9,592	8,772	9,044	8,335	11,599	13,143	13,733
TOTAL ACCIDENTS	27,772	27,001	26,032	29,579	29,068	26,229	27,479	32,778	35,341	35,885
FARS STATISTICS										
FATAL CRASHES: COMBINATION TRUCKS	3,863	3,519	3,645	3,907	3,892	3,825	3,746	3,939	3,678	3,583
TOTAL FATALITIES: COMBINATION TRUCKS	4,584	4,226	4,365	4,605	4,855	4,493	4,403	4,609	4,370	3,631
FATAL CRASHES: MEDIUM/HEAVY TRUCKS	4,928	4,396	4,615	4,831	4,841	4,785	4,813	4,885	4,672	4,518
TOTAL FATALITIES: MEDIUM/HEAVY TRUCKS	5,806	5,229	5,491	5,640	5,734	5,579	5,598	5,679	5,488	5,272

HIGHLIGHTS OF THE 1990 REPORT

1990 OVERVIEW

- This document profiles 1990 accidents reported by *interstate* commercial carriers of property subject to regulation by the U.S. Department of Transportation. It is suspected that accidents involving interstate carriers were significantly *under-reported*; actions are underway to correct this in the future.
- 35,885 accidents were reported by commercial carriers of property in 1990, 2 percent more than in 1989.
- Approximately 1 in 14 accidents in 1990 resulted in fatalities; however, more than 1 in 2 accidents produced non-fatal injuries.
- Reported accidents involved 3,309 fatalities, 34,348 non-fatal injuries, and over \$507 million in property damage.
- Three out of every 10 accidents oc-

curred in just five states: Texas, Illinois, California, Ohio, and Pennsylvania.

- Four out of every 10 reported fatalities occurred in eight states: Texas, Ohio, Tennessee, California, Indiana, Pennsylvania, Georgia, and North Carolina.

THE DRIVER

- Only 2 of every 10 persons killed — and 3 of every 10 persons non-fatally injured — in truck accidents were truck drivers or occupants.
- Drivers under 21 tended to be involved in accidents which were decidedly more severe than accidents involving drivers of other age groups.
- When accidents occurred, truck drivers not wearing seat belts were 75 percent more likely to be killed than those wearing belts.

THE VEHICLE

- Seven out of every 10 reported truck accidents involved tractor-semi-trailers.
- Heavier trucks tended to be involved in accidents with fewer fatalities/injuries than lighter trucks. Heavy truck accidents did, however, tend to produce higher property damage totals than light truck accidents.
- Mechanical defects contributed to very few accidents, according to the carriers reporting the accidents.

THE ACCIDENT SETTING

- Reported accidents were more numerous on divided highways, but more likely to be fatal on undivided highways.
- Seven out of 10 reported accidents

occurred under favorable weather and favorable road conditions.

THE ACCIDENT

- Four out of 5 accidents involved collisions between a truck and one or more other vehicles. These accidents generated 91 percent of the fatalities, 84 percent of the injuries, and 71 percent of the property damage reported during 1990.
- Collision accidents were more than three times as likely to result in fatalities than non-collision accidents.
- In 6 out of 7 non-collision accidents, the trucks reportedly overturned, ran off the road, or jackknifed.

Table of Contents

INTRODUCTION	ix
---------------------	-----------

Chapter 1: 1990 OVERVIEW	1
---------------------------------	----------

ACCIDENT CLASS TOTALS	1
ACCIDENT CONSEQUENCES	3
STATE ACCIDENT STATISTICS	6
FIVE-YEAR TRENDS	10

TABLES

1-1	1990 ACCIDENT SUMMARY	2
1-2	ACCIDENT CLASS TOTALS BY CARRIER TYPE, ACCIDENT TYPE, AND TRIP TYPE	2
1-3	BREAKDOWN OF FOR-HIRE ACCIDENTS	3
1-4	ACCIDENT CONSEQUENCES BY CARRIER TYPE, ACCIDENT TYPE, AND TRIP TYPE	3
1-5	BREAKDOWN OF FOR-HIRE ACCIDENT CONSEQUENCES	3
1-6	ACCIDENT CLASS TOTALS BY STATE	7
1-7	ACCIDENT CONSEQUENCES BY STATE	8
1-8	PERCENT FATAL ACCIDENTS BY STATE	9
1-9	ANNUAL PERCENTAGE CHANGE IN ACCIDENT STATISTICS	12

FIGURES

1-1	FATALITIES PER 100 ACCIDENTS BY ACCIDENT TYPE AND TRIP TYPE	4
1-2	INJURIES PER 100 ACCIDENTS BY ACCIDENT TYPE AND TRIP TYPE	5
1-3	PROPERTY DAMAGE PER 100 ACCIDENTS BY ACCIDENT TYPE AND TRIP TYPE	5
1-4	ACCIDENT LEVELS BY STATE	6

Accidents Reported by Motor Carriers of Property 1990

1-5	TOTAL ACCIDENTS BY YEAR	10
1-6	ACCIDENT CLASS TOTALS BY YEAR	11
1-7	FATALITIES BY YEAR	11
1-8	INJURIES BY YEAR	12

Chapter 2: THE DRIVER **13**

PHYSICAL CONDITION OF DRIVERS	13
ACCIDENTS AND DRIVER AGE	14
ACCIDENTS AND HOURS DRIVEN	16
USE OF SEAT BELTS	18

TABLES

2-1	ACCIDENTS, FATALITIES, INJURIES, AND PROPERTY DAMAGE BY CONDITION OF DRIVER AT TIME OF ACCIDENT	14
2-2	FATALITIES AND INJURIES AMONG TRUCK OCCUPANTS AND TRUCK NON-OCCUPANTS	14
2-3	ACCIDENT TYPE BY HOURS DRIVEN	18

FIGURES

2-1	ACCIDENTS BY DRIVER AGE	15
2-2	ACCIDENT CONSEQUENCES BY DRIVER AGE	15
2-3	ACCIDENTS BY HOURS DRIVEN SINCE LAST OFF DUTY	16
2-4	ACCIDENT CONSEQUENCES BY HOURS DRIVEN	17
2-5	SEAT BELT USAGE IN ACCIDENTS	18
2-6	DRIVER FATALITIES AND INJURIES BY SEAT BELT USAGE	19

Chapter 3: THE VEHICLE **21**

VEHICLE TYPE AND LENGTH	21
GROSS VEHICLE WEIGHT	22
CARGO TYPES	24
HAZARDOUS MATERIALS	25
MECHANICAL DEFECTS	25

TABLES

3-1	ACCIDENTS, FATALITIES, INJURIES, AND PROPERTY DAMAGE BY VEHICLE CONFIGURATION	22
3-2	ACCIDENT CLASS TOTALS BY VEHICLE LENGTH	22
3-3	ACCIDENT CLASS TOTALS BY GROSS VEHICLE WEIGHT	24
3-4	ACCIDENT CLASS TOTALS BY CARGO CLASSIFICATION	24
3-5	PERCENT FATAL ACCIDENTS BY CARGO CLASSIFICATION	25
3-6	ACCIDENTS, FATALITIES, INJURIES, AND PROPERTY DAMAGE INVOLVING HAZARDOUS MATERIALS BY CARRIER TYPE	25

FIGURES

3-1	ACCIDENT CONSEQUENCES BY VEHICLE LENGTH	23
3-2	ACCIDENT CONSEQUENCES BY GROSS VEHICLE WEIGHT	23
3-3	HAZARDOUS MATERIALS ACCIDENTS AS A PERCENT OF TOTAL ACCIDENTS, FATALITIES, INJURIES, AND PROPERTY DAMAGE	26
3-4	PRESENCE OF MECHANICAL DEFECTS IN ACCIDENTS	26
3-5	ACCIDENTS INVOLVING DEFECTS BY TYPE OF DEFECT	27

Chapter 4 : THE ACCIDENT SETTING **29**

ACCIDENT LOCALE	29
ENVIRONMENTAL CONDITIONS	29
TIME OF DAY	32
DAY OF WEEK AND MONTH OF YEAR	34

TABLES

4-1	ACCIDENT CLASS TOTALS BY HIGHWAY TYPE	30
4-2	EXPRESSWAY RAMP ACCIDENTS	30
4-3	ACCIDENTS, FATALITIES, INJURIES, AND PROPERTY DAMAGE BY CARRIER TYPE AND MONTH	36

FIGURES

4-1	ACCIDENTS BY LAND USE	30
4-2	TOTAL ACCIDENTS BY LIGHT, WEATHER, AND ROAD CONDITIONS	31
4-3	ACCIDENT CONSEQUENCES BY ENVIRONMENTAL CONDITIONS	32

Accidents Reported by Motor Carriers of Property 1990

4-4	ACCIDENTS BY TIME AND TYPE OF DAY . . . . .	.33
4-5	ACCIDENTS BY TIME OF DAY AND ACCIDENT TYPE . . . . .	.33
4-6	ACCIDENTS BY TIME OF DAY AND TRIP TYPE . . . . .	.34
4-7	FATALITIES AND INJURIES BY TIME OF DAY . . . . .	.35
4-8	PERCENT OF TOTAL ACCIDENTS BY DAY OF WEEK . . . . .	.35
4-9	PERCENT OF TOTAL ACCIDENTS BY MONTH . . . . .	.36

Chapter 5: THE ACCIDENT	37
--------------------------------	-----------

ACCIDENT TYPE OVERVIEW	37
COLLISION ACCIDENTS	38
NON-COLLISION ACCIDENTS	41

TABLES

5-1	ACCIDENTS, FATALITIES, INJURIES, AND PROPERTY DAMAGE BY ACCIDENT TYPE . . . . .	.37
5-2	ACCIDENT CONSEQUENCES BY ACCIDENT TYPE . . . . .	.38
5-3	COLLISION ACCIDENTS, FATALITIES, INJURIES, AND PROPERTY DAMAGE BY TYPE OF COLLISION . . . . .	.39
5-4	NON-COLLISION ACCIDENTS, FATALITIES, INJURIES, AND PROPERTY DAMAGE BY TYPE OF NON-COLLISION . . . . .	.42

FIGURES

5-1	COLLISION, NON-COLLISION, AND TOTAL ACCIDENTS BY ACCIDENT CLASS . . . . .	.38
5-2	FATALITIES AND INJURIES PER 100 COLLISION ACCIDENTS . . . . .	.39
5-3	PROPERTY DAMAGE PER ACCIDENT BY TYPE OF COLLISION . . . . .	.40
5-4	FATALITIES AND INJURIES IN VEHICULAR COLLISIONS BY REPORTING VEHICLE MOVEMENT . . . . .	.41
5-5	FATALITIES AND INJURIES PER 100 NON-COLLISION ACCIDENTS . . . . .	.42
5-6	PROPERTY DAMAGE PER ACCIDENT BY TYPE OF NON-COLLISION . . . . .	.43

APPENDIX	45
-----------------	-----------

GLOSSARY	46
MCS 50-T ACCIDENT REPORT FORM	48
COMMON VEHICLE CONFIGURATIONS	50

INTRODUCTION

This document presents aggregate statistics derived from the *1990 Motor Carriers of Property Accident Database*. The database was compiled from reports of applicable accidents filed by commercial carriers of property subject to the Department of Transportation Act (49 U.S.C. 1651-60). The database is maintained by the Office of Motor Carriers (OMC), Federal Highway Administration, U.S. Department of Transportation.

The data presented in this publication are intended for use by individuals and organizations in the public and private sectors requiring information on accidents of motor carriers of property. Readers seeking general information will find that these materials satisfy many of their basic data requirements. Persons needing more specialized information than presented here are encouraged to contact OMC directly.

ACCIDENT REPORTING

In 1990, motor carriers that operated commercial motor vehicles in interstate commerce were subject to the reporting requirements specified in the *Code of Federal Regulations*, Title 49, Part 394.

Additionally, the intrastate transportation performed by those interstate motor carriers was subject to the same reporting requirements. Accidents are reported using Federal Form MCS 50-T, *Motor Carrier Accident Report (Property-Carrying)*.

A "reportable" accident has occurred when one or more of the following conditions results:

- At least one person dies.
- At least one person experiences bodily injury which requires immediate medical treatment away from the scene of the accident.
- Property is damaged in the amount of \$4,400 or more, based on actual or estimated costs.

The MCS 50-T report contains over 60 data elements pertaining to the motor carrier, driver, vehicles, and circumstances of the accident. Accident reports, when received by OMC, are entered into the Accident Database for Motor Carriers of Property.

NATURE OF THE DATA

Readers should be aware of several important limitations in the 1990 data. First, the database used to compile this report is limited to those accident occurrences for which MCS 50-T's were filed. This is significant because there is substantial evidence to suggest that carriers are not reporting all accident occurrences. Secondly, the circumstances of the accidents are entered into the database precisely as that information is reported by the carriers. Consequently, it is possible that commercial carriers' accounts of accidents, as recorded in the database, are biased and deviate from the accounts of the same accidents compiled by police, courts, insurance companies, etc.

Finally, users of this report should remember that this publication is a summary of accident statistics presented without benefit of *exposure* factors. Exposure refers to the potential opportunity for a given event to occur. Suppose, for instance, that two interstate carriers, A and B, experienced 12 and 18 reportable accidents, respectively. Carrier A logged 5 million miles of travel during the year, while Carrier B travelled 10 million miles. Initially, it might look as though Carrier B was less safe than Carrier A, since B had 18 accidents and A had only 12. However, when one considers the exposure—in this case, *total vehicle miles driven*—a very different picture emerges. Now it is seen that Carrier A experienced 2.4 accidents per million miles travelled, whereas Carrier B experienced only 1.8 accidents per million miles of travel. Perhaps Carrier B was really the safer of the two carriers.

Because this document is largely deprived of exposure data, one must exercise great caution in attempting to compare the probabilities of accidents occurring under various circumstances. For instance, while the data on accidents by time of day chronicled in Chapter 4 show that most accidents occurred during the day, one cannot necessarily conclude that the probability of accidents happening in the daytime was greater than at night. Before one could draw that conclusion, one would need to examine such exposure factors as the number of commercial vehicles on the roads in the daytime versus the nighttime.

One may, however, properly use the data in this document to compare the probable consequences of accidents under different circumstances. For example, one *can* make a valid determination about whether accidents were more severe on undivided versus divided highways.

SPECIAL NOTE ON PROPERTY DAMAGE

OMC employs a variety of pre- and post-entry screening activities to help ensure that MCS 50-T reports entered into the Accident Database were complete and accurate. During 1990, post-entry screening included an automated search for those accident records in which Total Property Damage (Item 19A) had been left blank by carriers; a value of "\$4,401" was inserted in order to guarantee that all records in the database met Federal reporting criteria for property damage (see *Accident Reporting*, page ix, for a description of these criteria). The "\$4,401" value was added to each record

in which Total Property Damage was blank, including those records where Total Persons Killed or Injured (Items 17-19) were not blank.

Consequently, one should view references in this document to property damage with caution—actual property damage values could have been substantially higher or lower than those shown. It should be further noted that there is no mechanism on the MCS 50-T report for gauging whether the Total Property Damage recorded by a carrier represents an "actual" or "estimated" cost.

ORGANIZATION OF THE DOCUMENT

This document contains five chapters:

- Chapter 1: 1990 Overview
- Chapter 2: The Driver
- Chapter 3: The Vehicle
- Chapter 4: The Accident Setting
- Chapter 5: The Accident

Within each chapter, data are organized under specific topics. A glossary of terms, a copy of Form MCS 50-T, and a depiction of common vehicle configurations are presented in the Appendix.

DATA CONVENTIONS

The following conventions are used throughout this document:

- Percentages shown in tables and figures are rounded to the nearest one-tenth of 1 percent. Percentages do not always total 100 due to rounding.
- Items which motor carriers left blank on the 50-T report are noted in tables and figures under the "Not Reported" category.
- When the size of the sample from which the data shown in a given figure were drawn is not readily apparent, the sample size is identified at the base of the figure. For example, "N=35,885" means that the data shown were drawn from 35,885 accident reports.
- Accident consequences—notably fatality and injury rates—are usually expressed as a rate per 100 accidents.
- Specific parts of the *Federal Motor Carrier Safety Regulations (FMCSRs)* are referenced in the text of the document, as appropriate. For example, "49 CFR 394" means Title 49 of the *Code of Federal Regulations*, Part 394.

ADDITIONAL INFORMATION

- For answers to questions not addressed in this publication, please contact the Federal Highway Administration, Office of Motor Carriers, HIA-10, at 400 Seventh Street, S.W., Washington, D.C. 20590. The telephone number is 202-366-4023.

Chapter 1

1990 OVERVIEW

Accident Class Totals Accident Consequences State Accident Statistics Five-Year Trends

In 1990, 35,885 accidents involving commercial interstate carriers of property were reported by the individuals and companies who operate commercial motor vehicles. These accidents resulted in 3,309 fatalities, 34,348 non-fatal injuries, and property damage estimated at \$507 million. Fewer than 1 in 14 accidents involved fatalities, though more than 1 in 2 produced non-fatal injuries. Accidents reported in 1990 increased by approximately 37 percent over the 1986 total. During the same period, the number of reported fatalities increased by nearly 26 percent; however, there were 4 percent fewer fatalities in 1990 than 1989.

ACCIDENT CLASS TOTALS

The 35,885 accidents reported in 1990 fall into three classes:

- **Fatal Accidents.** This group includes all accidents for which at least one fatality was reported. These accidents may also have involved non-

fatal injuries and property damage.

- **Injury Accidents.** At least one injury, but no fatalities, was reported for each accident in this category. Property damage may also have been a consequence of "injury" accidents.
- **Property Damage Accidents.** Each of these accidents resulted in actual or estimated vehicle, cargo, and other property damage of \$4,400 or more, but involved no fatalities or injuries.

Accidents are grouped into these classes according to the highest accident severity. For example, accidents which resulted in both fatalities and injuries are classified as "fatal" accidents. Accidents involving both injuries and property damage fall into the "injury" category.

Table 1-1 summarizes 1990 accident data by the three accident classes.

Accidents Reported by Motor Carriers of Property 1990

Table 1-1 1990 Accident Summary		
	NUMBER	PERCENT
FATAL ACCIDENTS	2,619	7.3
INJURY ACCIDENTS	19,533	54.4
PROPERTY DAMAGE ACCIDENTS	13,733	38.3
TOTAL ACCIDENTS	35,885	100.0

In Table 1-2, class totals are broken down further by accident type, trip type, and carrier type. Accident type encompasses (1) collisions with moving, fixed, or parked objects; and (2) non-collisions, e.g., fires and jackknives. Trip type indicates whether the commercial vehicles were engaged in over-the-road or local transportation when the accidents occurred. Carrier type includes for-hire and private.

Four out of every 5 accidents reported in 1990 were the result of collisions; 3 out of 4 accidents occurred during over-the-road trips (i.e., on highways between two non-local destination points). In general, as accident severity increased — from property damage to injuries to

fatalities — the likelihood that the resultant accidents entailed collisions also increased.

For-hire carriers were involved in 98 percent of all accidents reported in 1990, suggesting that for-hire carriers, as a group, are (1) much less safe than private carriers, (2) travelling considerably more miles than private carriers or (3) much more likely to report their accidents than private carriers. Based on its long-term experience monitoring and regulating truck safety, OMC presumes the latter to be the case.

Table 1-3 breaks down accident class totals by type of for-hire carrier.

Table 1-2 Accident Class Totals By Carrier Type, Accident Type, and Trip Type								
ACCIDENT TYPE	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
COLLISION	2,417	92.3	16,195	82.9	10,035	73.1	28,647	79.8
NON-COLLISION	197	7.5	3,330	17.0	3,687	26.8	7,214	20.1
TYPE NOT RPTD.	5	0.2	8	0.0	11	0.1	24	0.1
TOTAL	2,619	100.0	19,533	99.9	13,733	100.0	35,885	100.0
TRIP TYPE								
OVER-THE-ROAD	1,933	73.8	13,648	69.9	10,557	76.9	26,138	72.8
LOCAL	651	24.9	5,623	28.8	2,996	21.8	9,270	25.8
TYPE NOT RPTD.	35	1.3	262	1.3	180	1.3	477	1.3
TOTAL	2,619	100.0	19,533	100.0	13,733	100.0	35,885	99.9
CARRIER TYPE								
FOR-HIRE	2,534	96.8	19,174	98.2	13,434	97.8	35,142	97.9
PRIVATE	84	3.2	341	1.7	284	2.1	709	2.0
TYPE NOT RPTD.	1	0.0	18	0.1	15	0.1	34	0.1
TOTAL	2,619	100.0	19,533	100.0	13,733	100.0	35,885	100.0

Table 1-3
Breakdown of For-Hire Accidents

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
FOR-HIRE CARRIERS								
ICC AUTHORIZED	1,923	75.9	15,637	81.6	11,050	82.3	28,610	81.4
ICC EXEMPT	594	23.4	3,471	18.1	2,341	17.4	6,406	18.2
OTHER	17	0.7	66	0.3	43	0.3	126	0.4
TOTAL	2,534	100.0	19,174	100.0	13,434	100.0	35,142	100.0

ACCIDENT CONSEQUENCES

Fatalities, injuries, and property damage—the physical consequences of commercial vehicle accidents—are summarized in Tables 1-4 and 1-5. Table 1-4 shows that the majority of 1990 accident consequences were the result of (1) collision

accidents, (2) accidents occurring during over-the-road transportation, and (3) accidents involving for-hire carriers. As with the class totals, nearly all (97 percent) of the accident consequences reported involved for-hire carriers. Table 1-5 shows that most of these carriers were "ICC authorized."

Table 1-4
Accident Consequences
By Carrier Type, Accident Type, and Trip Type

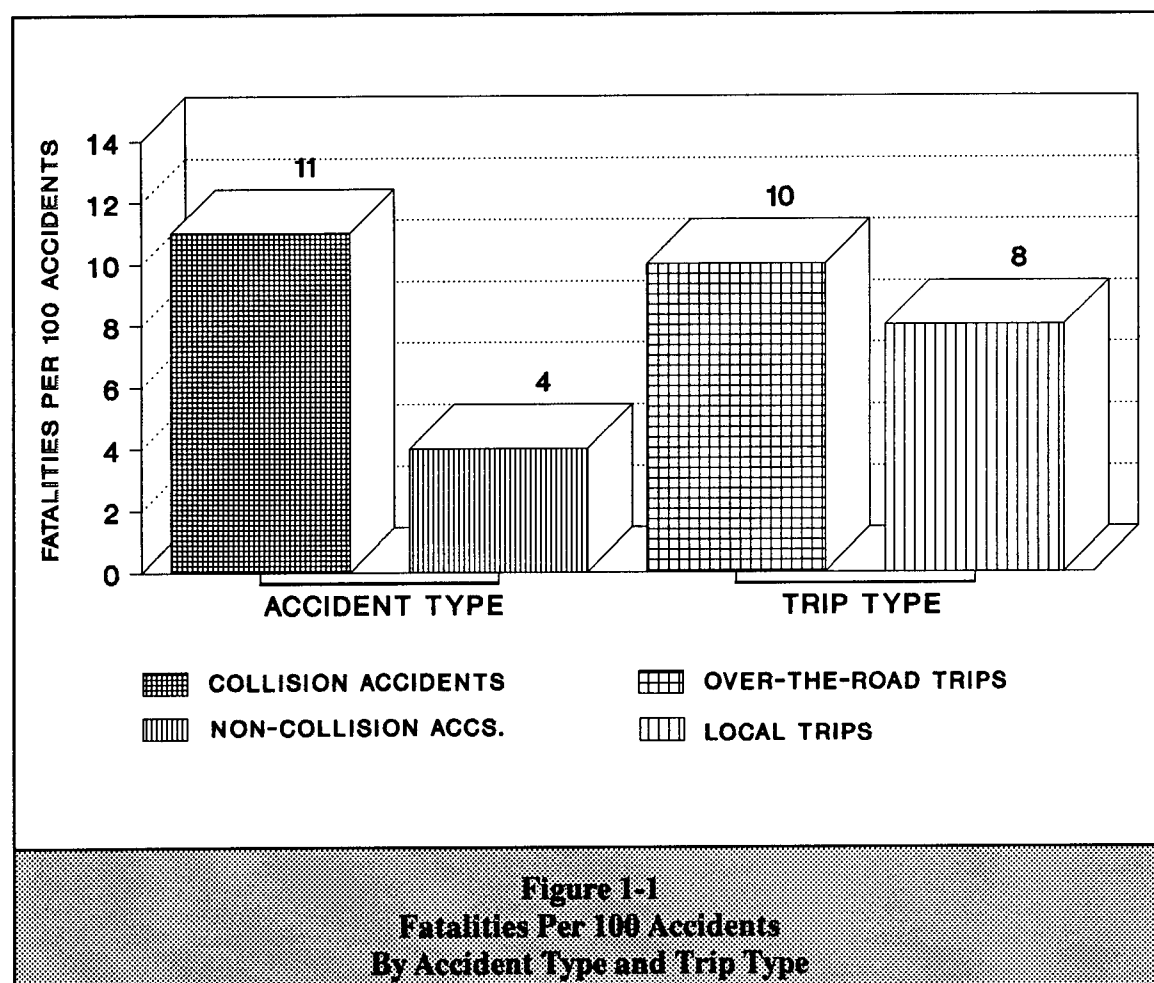
	FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	\$	%
ACCIDENT TYPE						
COLLISION	3,018	91.2	28,896	84.1	359,338,863	70.8
NON-COLLISION	284	8.6	5,438	15.8	147,658,107	29.1
TYPE NOT RPTD.	7	0.2	14	0.0	334,415	0.1
TOTAL	3,309	100.0	34,348	99.9	507,330,385	100.0
TRIP TYPE						
OVER-THE-ROAD	2,499	75.5	24,237	70.6	400,621,030	79.0
LOCAL	765	23.1	9,644	28.1	101,072,430	19.9
TYPE NOT RPTD.	45	1.4	467	1.4	5,637,925	1.1
TOTAL	3,309	100.0	34,348	100.1	507,330,385	100.0
CARRIER TYPE						
FOR-HIRE	3,208	96.9	33,654	98.0	495,037,741	97.6
PRIVATE	100	3.0	662	1.9	12,030,201	2.4
TYPE NOT RPTD.	1	0.0	32	0.1	263,443	0.1
TOTAL	3,309	99.9	34,348	100.0	507,330,385	100.1

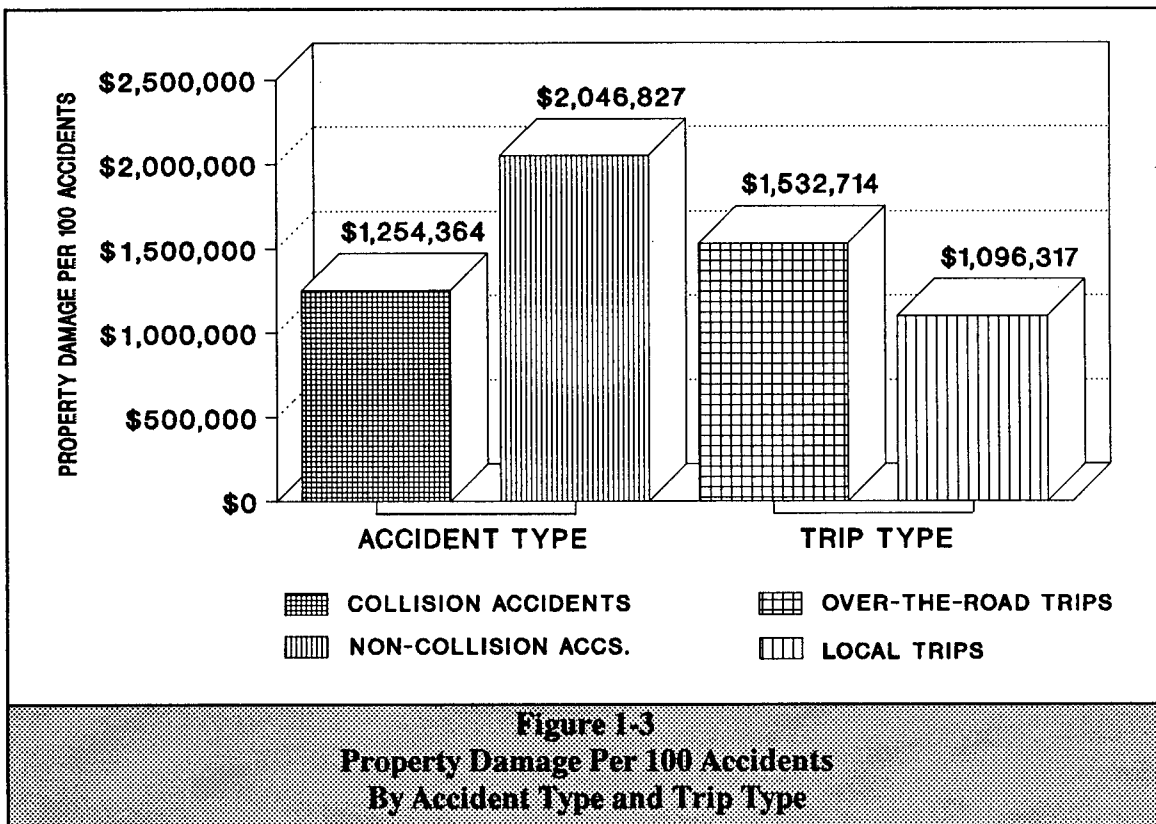
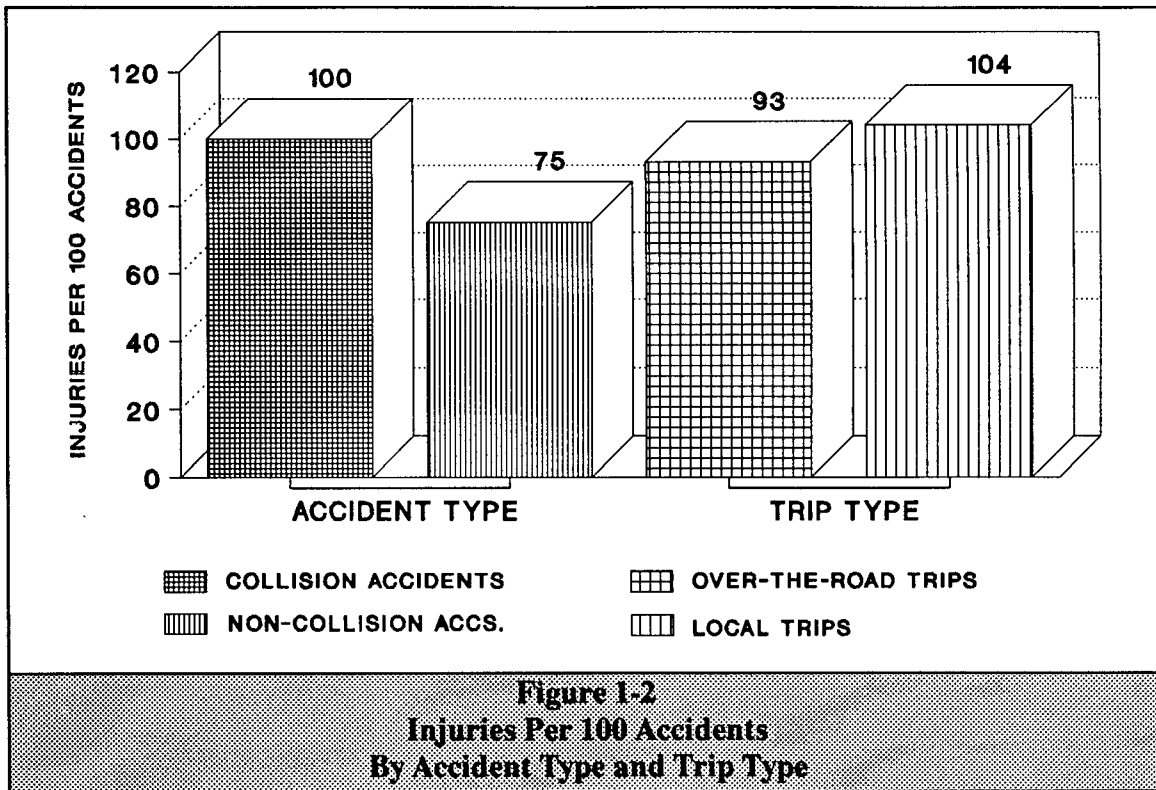
Table 1-5
Breakdown of For-Hire Accident Consequences

	FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	\$	%
FOR-HIRE CARRIERS						
ICC AUTHORIZED	2,459	76.7	27,098	80.5	405,517,316	81.9
ICC EXEMPT	731	22.8	6,439	19.1	87,877,758	17.8
OTHER	18	0.6	117	0.3	1,643,667	0.3
TOTAL	3,208	100.1	33,654	99.9	495,037,741	100.0

In 1990, less than 1 out of every 14 (7.3 percent) commercial vehicle accidents produced fatalities. Fatal accidents averaged 1.3 deaths each. Figures 1-1, 1-2, and 1-3 show the rates at which fatalities, injuries, and property damage — by accident and trip type — were generated during 1990. In general, the fatality rate for collision accidents was 2.5 times higher than the rate for non-collision accidents (Figure 1-1). Non-fatal injuries also occurred more frequently in collisions than in non-collisions (Figure 1-2). Trip type—local versus over-the-

road—does not appear to have significantly affected fatality and injury rates (Figures 1-1 and 1-2). Property damage in non-collision accidents was produced at a rate over 60 percent higher than in collision accidents (Figure 1-3). This may have been the result of relatively high cargo losses sustained during non-collision accidents (e.g., when vehicles jackknifed). Also, property damage resulting from over-the-road accidents was generated at a rate nearly 40 percent higher than in accidents occurring during local trips.





STATE ACCIDENT STATISTICS

During 1990, reported accidents occurred in every state, the District of Columbia, Puerto Rico, and the Virgin Islands. Additional accidents involving U.S. carriers in foreign commerce (in Canada and Mexico) were also reported.

Figure 1-4 compares levels of accidents by state. The largest number of accidents were reported in the travel corridor extending northeast, from Missouri to New York. Large numbers of accidents also occurred in Texas, California, and several southeastern states. In general, accidents in a given state were experienced in proportion to the volume of commercial vehicle traffic in that state. Hence, more accidents occurred in states east of the Mississippi River than in

states west of the river.

Tables 1-6 and 1-7 summarize the statistics on accident classes and consequences by state. In 1990, reported accidents ranged from a low of 10 in Hawaii to a high of 2,220 in Texas (Table 1-6). Reported fatalities stretched from 1 in the Hawaii to 214 in Texas (Table 1-7).

Twenty-nine percent of all accidents reported during the year occurred in just five states: Texas, Illinois, California, Ohio, and Pennsylvania (Table 1-6). Thirty-nine percent of the reported fatalities occurred in eight states: Texas, Ohio, Tennessee, California, Indiana, Pennsylvania, Georgia, and North Carolina (Table 1-7).

Table 1-8 compares the percentage of accidents, by state, which were fatal.

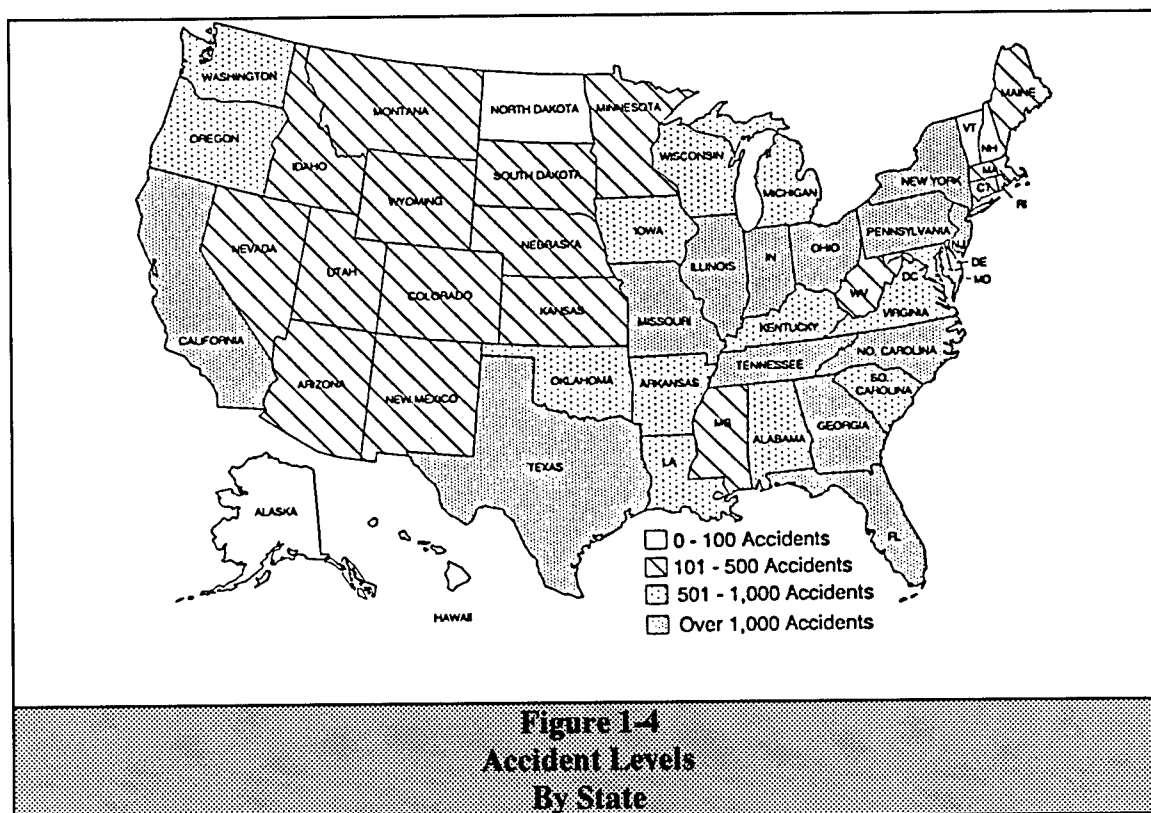


Table 1-6
Accident Class Totals
By State

STATE	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
ALABAMA	79	3.0	491	2.5	283	2.1	853	2.4
ALASKA	2	0.1	18	0.1	21	0.2	41	0.1
ARIZONA	41	1.6	242	1.2	179	1.3	462	1.3
ARKANSAS	48	1.8	332	1.7	243	1.8	623	1.7
CALIFORNIA	136	5.2	1,159	5.9	737	5.4	2,032	5.7
COLORADO	27	1.0	227	1.2	176	1.3	430	1.2
CONNECTICUT	24	0.9	214	1.1	198	1.4	436	1.2
DELAWARE	12	0.5	97	0.5	45	0.3	154	0.4
DIST. OF COLUMBIA	4	0.2	49	0.3	21	0.2	74	0.2
FLORIDA	112	4.3	674	3.5	367	2.7	1,153	3.2
GEORGIA	110	4.2	751	3.8	424	3.1	1,285	3.6
HAWAII	1	0.0	5	0.0	4	0.0	10	0.0
IDAHO	13	0.5	75	0.4	100	0.7	188	0.5
ILLINOIS	108	4.1	1,141	5.8	916	6.7	2,165	6.0
INDIANA	118	4.5	780	4.0	566	4.1	1,464	4.1
IOWA	33	1.3	271	1.4	284	2.1	588	1.6
KANSAS	33	1.3	255	1.3	186	1.4	474	1.3
KENTUCKY	64	2.4	394	2.0	255	1.9	713	2.0
LOUISIANA	68	2.6	450	2.3	252	1.8	770	2.1
MAINE	12	0.5	56	0.3	59	0.4	127	0.4
MARYLAND	34	1.3	479	2.5	269	2.0	782	2.2
MASSACHUSETTS	34	1.3	258	1.3	150	1.1	442	1.2
MICHIGAN	74	2.8	503	2.6	314	2.3	891	2.5
MINNESOTA	38	1.5	236	1.2	217	1.6	491	1.4
MISSISSIPPI	48	1.8	265	1.4	174	1.3	487	1.4
MISSOURI	88	3.4	609	3.1	458	3.3	1,155	3.2
MONTANA	15	0.6	71	0.4	72	0.5	158	0.4
NEBRASKA	27	1.0	188	1.0	171	1.2	386	1.1
NEVADA	16	0.6	102	0.5	85	0.6	203	0.6
NEW HAMPSHIRE	11	0.4	47	0.2	27	0.2	85	0.2
NEW JERSEY	45	1.7	553	2.8	420	3.1	1,018	2.8
NEW MEXICO	27	1.0	181	0.9	120	0.9	328	0.9
NEW YORK	85	3.2	791	4.0	646	4.7	1,522	4.2
NORTH CAROLINA	109	4.2	691	3.5	402	2.9	1,202	3.3
NORTH DAKOTA	2	0.1	24	0.1	41	0.3	67	0.2
OHIO	155	5.9	1,118	5.7	752	5.5	2,025	5.6
OKLAHOMA	43	1.6	265	1.4	200	1.5	508	1.4
OREGON	31	1.2	306	1.6	276	2.0	613	1.7
PENNSYLVANIA	115	4.4	1,130	5.8	750	5.5	1,995	5.6
RHODE ISLAND	3	0.1	40	0.2	23	0.2	66	0.2
SOUTH CAROLINA	71	2.7	387	2.0	230	1.7	688	1.9
SOUTH DAKOTA	6	0.2	50	0.3	55	0.4	111	0.3
TENNESSEE	93	3.6	580	3.0	378	2.8	1,051	2.9
TEXAS	167	6.4	1,237	6.3	816	5.9	2,220	6.2
UTAH	13	0.5	111	0.6	103	0.8	227	0.6
VERMONT	3	0.1	37	0.2	48	0.3	88	0.2
VIRGINIA	68	2.6	531	2.7	296	2.2	895	2.5
WASHINGTON	39	1.5	273	1.4	213	1.6	525	1.5
WEST VIRGINIA	33	1.3	224	1.1	155	1.1	412	1.1
WISCONSIN	54	2.1	349	1.8	287	2.1	690	1.9
WYOMING	16	0.6	146	0.7	173	1.3	335	0.9
U.S. TERRITORIES								
AMER. SAMOA	0	0.0	0	0.0	0	0.0	0	0.0
CANAL ZONE	0	0.0	0	0.0	0	0.0	0	0.0
GUAM	0	0.0	0	0.0	0	0.0	0	0.0
PUERTO RICO	2	0.1	0	0.0	1	0.0	3	0.0
VIRGIN ISLANDS	0	0.0	1	0.0	0	0.0	1	0.0
CANADA	9	0.3	68	0.3	92	0.7	169	0.5
MEXICO	0	0.0	1	0.0	2	0.0	3	0.0
STATE NOT RPTD.	0	0.0	0	0.0	1	0.0	1	0.0
TOTAL	2,619	100.1	19,533	99.9	13,733	100.5	35,885	99.6

Accidents Reported by Motor Carriers of Property 1990

Table 1-7 Accident Consequences By State						
STATE	FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	\$	%
ALABAMA	99	3.0	838	2.4	11,767,254	2.3
ALASKA	2	0.1	21	0.1	962,195	0.2
ARIZONA	52	1.6	460	1.3	6,940,489	1.4
ARKANSAS	58	1.8	591	1.7	10,323,954	2.0
CALIFORNIA	159	4.8	2,079	6.1	25,489,827	5.0
COLORADO	31	0.9	410	1.2	7,702,829	1.5
CONNECTICUT	27	0.8	340	1.0	4,975,348	1.0
DELAWARE	17	0.5	180	0.5	1,629,433	0.3
DIST. OF COLUMBIA	4	0.1	72	0.2	583,862	0.1
FLORIDA	128	3.9	1,182	3.4	14,212,404	2.8
GEORGIA	138	4.2	1,306	3.8	16,387,729	3.2
HAWAII	1	0.0	7	0.0	147,022	0.0
IDAHO	20	0.6	125	0.4	4,541,538	0.9
ILLINOIS	126	3.8	1,916	5.6	32,250,529	6.4
INDIANA	146	4.4	1,461	4.3	24,514,059	4.8
IOWA	38	1.1	491	1.4	9,516,244	1.9
KANSAS	41	1.2	460	1.3	8,100,792	1.6
KENTUCKY	83	2.5	736	2.1	9,264,339	1.8
LOUISIANA	86	2.6	852	2.5	9,467,527	1.9
MAINE	13	0.4	93	0.3	1,923,825	0.4
MARYLAND	40	1.2	782	2.3	8,741,015	1.7
MASSACHUSETTS	41	1.2	408	1.2	4,253,157	0.8
MICHIGAN	89	2.7	810	2.4	12,425,443	2.4
MINNESOTA	43	1.3	414	1.2	7,111,216	1.4
MISSISSIPPI	65	2.0	487	1.4	7,703,400	1.5
MISSOURI	114	3.4	1,141	3.3	16,086,999	3.2
MONTANA	16	0.5	134	0.4	2,984,166	0.6
NEBRASKA	33	1.0	335	1.0	6,018,722	1.2
NEVADA	21	0.6	196	0.6	3,317,431	0.7
NEW HAMPSHIRE	14	0.4	87	0.3	784,433	0.2
NEW JERSEY	55	1.7	974	2.8	11,848,737	2.3
NEW MEXICO	46	1.4	310	0.9	5,852,052	1.2
NEW YORK	101	3.1	1,328	3.9	20,348,094	4.0
NORTH CAROLINA	138	4.2	1,295	3.8	17,007,288	3.4
NORTH DAKOTA	3	0.1	39	0.1	1,119,585	0.2
OHIO	191	5.8	1,878	5.5	26,863,202	5.3
OKLAHOMA	52	1.6	483	1.4	8,456,537	1.7
OREGON	40	1.2	534	1.6	9,023,721	1.8
PENNSYLVANIA	141	4.3	1,945	5.7	27,672,296	5.5
RHODE ISLAND	3	0.1	57	0.2	474,123	0.1
SOUTH CAROLINA	87	2.6	682	2.0	10,292,523	2.0
SOUTH DAKOTA	6	0.2	84	0.2	1,525,673	0.3
TENNESSEE	167	5.0	1,106	3.2	14,359,103	2.8
TEXAS	214	6.5	2,082	6.1	28,938,669	5.7
UTAH	17	0.5	224	0.7	6,269,679	1.2
VERMONT	3	0.1	62	0.2	1,251,715	0.2
VIRGINIA	90	2.7	954	2.8	12,419,521	2.4
WASHINGTON	45	1.4	483	1.4	7,828,870	1.5
WEST VIRGINIA	58	1.8	398	1.2	6,485,542	1.3
WISCONSIN	66	2.0	604	1.8	9,098,016	1.8
WYOMING	25	0.8	276	0.8	7,059,278	1.4
U.S. TERRITORIES						
AMERICAN SAMOA	0	0.0	0	0.0	0	0.0
CANAL ZONE	0	0.0	0	0.0	0	0.0
GUAM	0	0.0	0	0.0	0	0.0
PUERTO RICO	3	0.1	0	0.0	51,600	0.0
VIRGIN ISLANDS	0	0.0	1	0.0	0	0.0
CANADA	13	0.4	134	0.4	2,910,380	0.6
MEXICO	0	0.0	1	0.0	40,000	0.0
STATE NOT RPTD.	0	0.0	0	0.0	7,000	0.0
TOTAL	3,309	100.2	34,348	100.4	507,330,385	99.9

Table 1-8
Percent Fatal Accidents
By State

STATE	FATAL ACCIDENTS	TOTAL ACCIDENTS	% FATAL ACCIDENTS
ALABAMA	79	853	9.3
ALASKA	2	41	4.9
ARIZONA	41	462	8.9
ARKANSAS	48	623	7.7
CALIFORNIA	136	2,032	6.7
COLORADO	27	430	6.3
CONNECTICUT	24	436	5.5
DELAWARE	12	154	7.8
DIST. OF COLUMBIA	4	74	5.4
FLORIDA	112	1,153	9.7
GEORGIA	110	1,285	8.6
HAWAII	1	10	10.0
IDAHO	13	188	6.9
ILLINOIS	108	2,165	5.0
INDIANA	118	1,464	8.1
IOWA	33	588	5.6
KANSAS	33	474	7.0
KENTUCKY	64	713	9.0
LOUISIANA	68	770	8.8
MAINE	12	127	9.4
MARYLAND	34	782	4.3
MASSACHUSETTS	34	442	7.7
MICHIGAN	74	891	8.3
MINNESOTA	38	491	7.7
MISSISSIPPI	48	487	9.9
MISSOURI	88	1,155	7.6
MONTANA	15	158	9.5
NEBRASKA	27	386	7.0
NEVADA	16	203	7.9
NEW HAMPSHIRE	11	85	12.9
NEW JERSEY	45	1,018	4.4
NEW MEXICO	27	328	8.2
NEW YORK	85	1,522	5.6
NORTH CAROLINA	109	1,202	9.1
NORTH DAKOTA	2	67	3.0
OHIO	155	2,025	7.7
OKLAHOMA	43	508	8.5
OREGON	31	613	5.1
PENNSYLVANIA	115	1,995	5.8
RHODE ISLAND	3	66	4.5
SOUTH CAROLINA	71	688	10.3
SOUTH DAKOTA	6	111	5.4
TENNESSEE	93	1,051	8.8
TEXAS	167	2,220	7.5
UTAH	13	227	5.7
VERMONT	3	88	3.4
VIRGINIA	68	895	7.6
WASHINGTON	39	525	7.4
WEST VIRGINIA	33	412	8.0
WISCONSIN	54	690	7.8
WYOMING	16	335	4.8
U.S. TERRITORIES			
AMERICAN SAMOA	0	0	0.0
CANAL ZONE	0	0	0.0
GUAM	0	0	0.0
PUERTO RICO	2	3	66.7
VIRGIN ISLANDS	0	1	0.0
CANADA	9	169	5.3
MEXICO	0	3	0.0
STATE NOT RPTD.	0	1	0.0
TOTAL	2,619	35,885	7.3

FIVE-YEAR TRENDS

Figures 1-5 through 1-8 summarize accident trends for the five-year period, 1986–1990. In reviewing these data, note that the property damage thresholds (i.e., the lower-end dollar boundaries at which accidents are reportable according to the Federal property damage criterion) have been adjusted for inflation in terms of 1975 dollars. Hence, those accidents which were reported, but which did not meet the adjusted thresholds, have been excluded from the figures and tables.

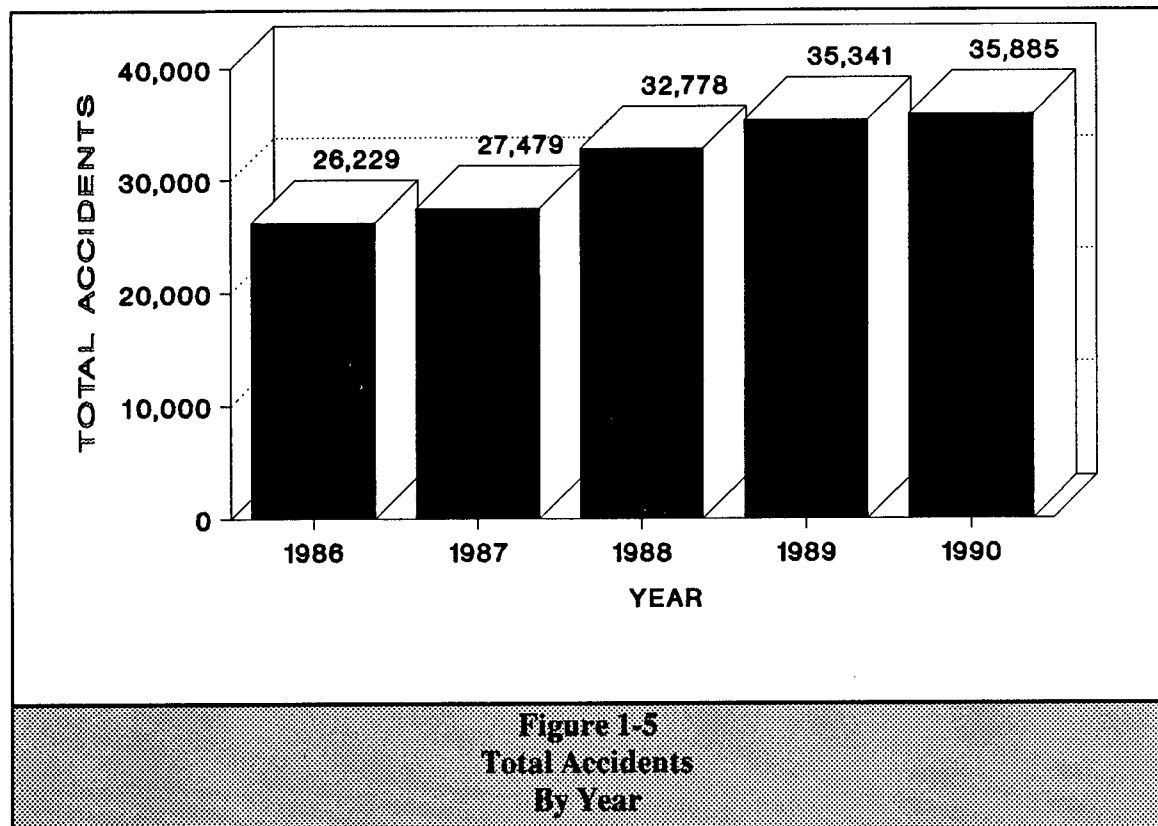
Key trends during the five-year period included the following:

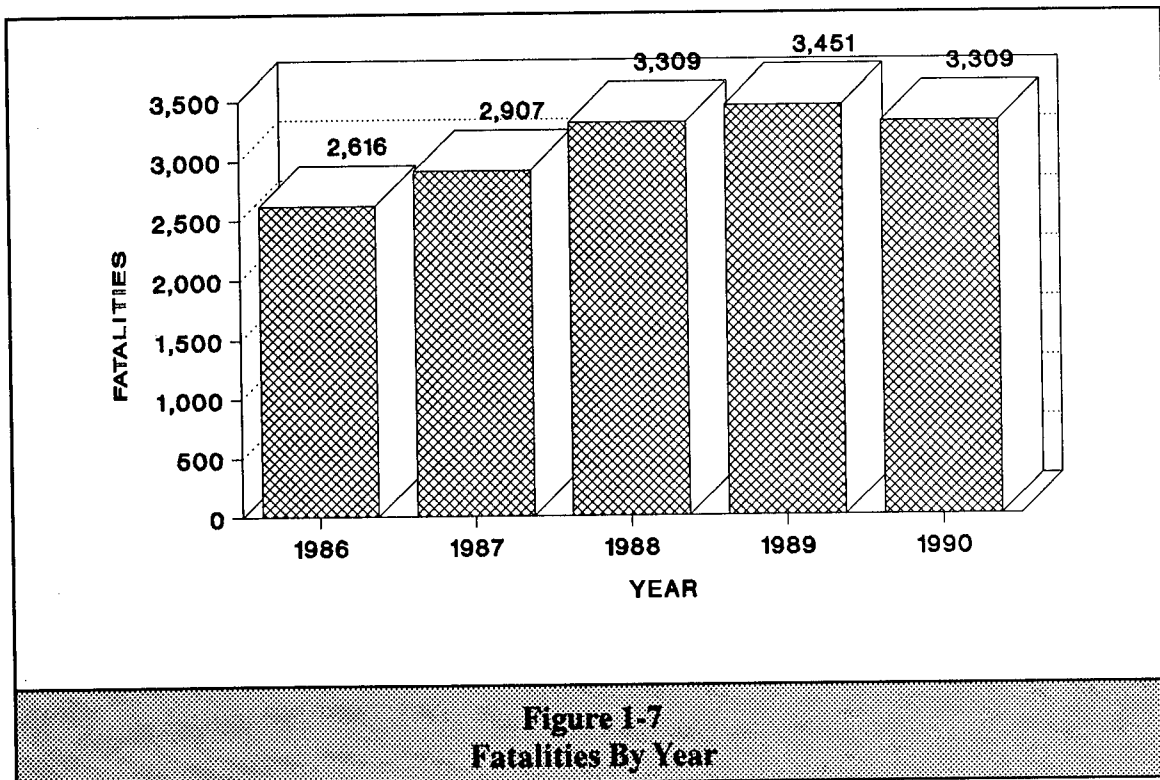
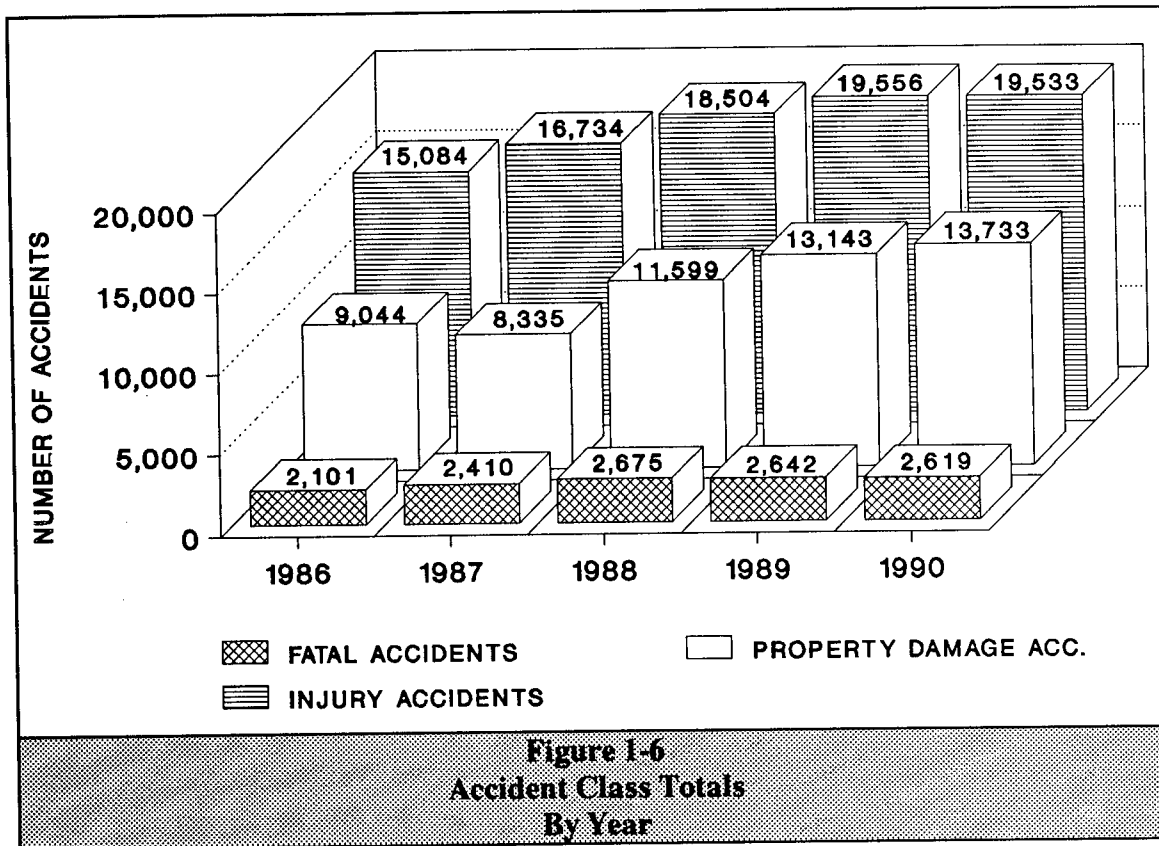
- Accidents reported in 1990 increased 37 percent over total acci-

dents reported in 1986 (Figure 1-5).

- Fatal accidents increased 25 percent over the 1986 total, to reach 2,619 in 1990 (Figure 1-6). Total fatalities increased by 26 percent to 3,309 in 1990 (Figure 1-7).
- Total injuries, exclusive of fatalities, increased nearly 37 percent over the 1986 value, to 34,348 in 1990 (Figure 1-8).

Table 1-9 summarizes the statistical data for the five-year period. Percentage changes from year to year are shown for each statistic. In general, accidents, fatalities, injuries, and property damage, after declining in 1986, tended to increase significantly each year until 1990.





Accidents Reported by Motor Carriers of Property 1990

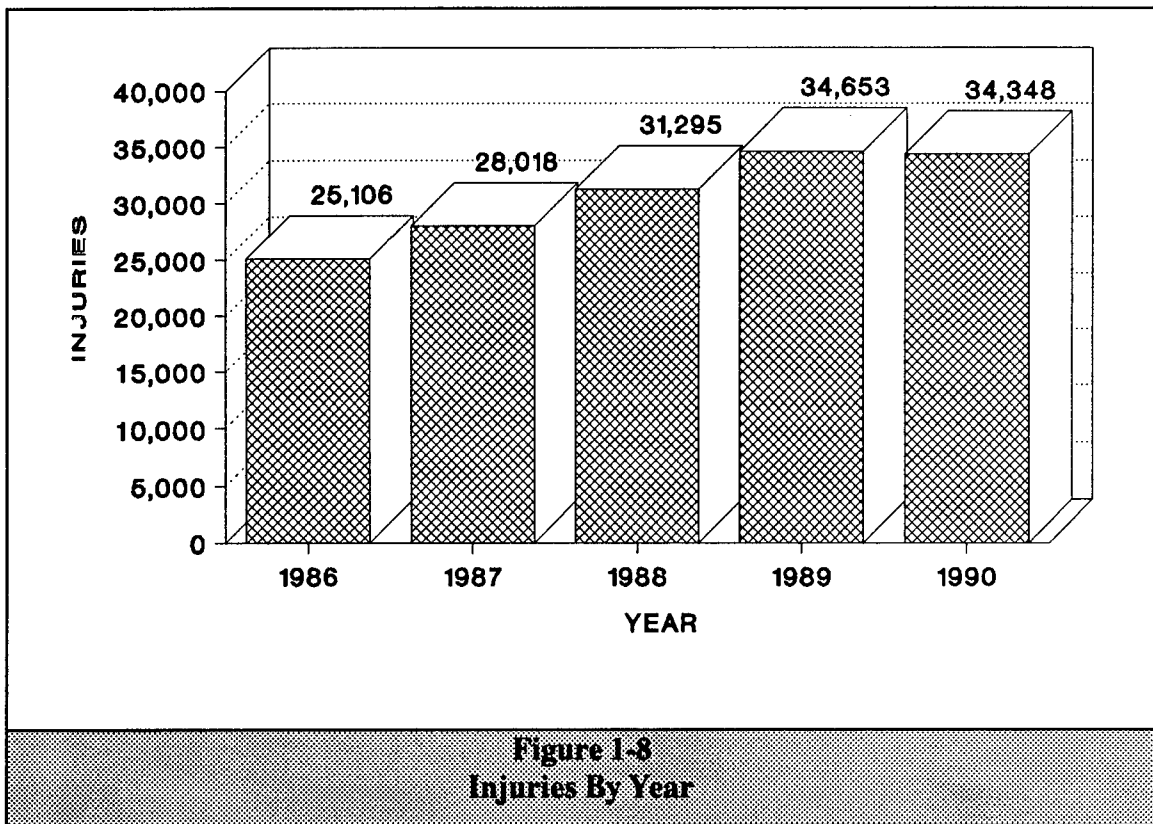


Table 1-9 Annual Percentage Change in Accident Statistics					
	1986-1987	1987-1988	1988-1989	1989-1990	1986-1990
ACCIDENTS					
FATAL	+14.7	+11.0	-1.2	-0.9	+24.7
INJURY	+10.9	+10.6	+5.7	-0.1	+29.5
PROPERTY DAMAGE	-7.8	+39.2	+13.3	+4.5	+51.8
TOTAL	+4.8	+19.3	+7.8	+1.5	+36.8
CONSEQUENCES					
FATALITIES	+11.1	+13.8	+4.3	-4.1	+26.5
INJURIES	+11.6	+11.7	+10.7	-0.9	+36.8

Chapter 2

THE DRIVER

Physical Condition of Drivers Accidents and Driver Age Accidents and Hours Driven Use of Seat Belts

At the time of the accident, the typical professional driver was male, between the ages of 25 and 45, and reported to be in good physical condition. Driver age appeared to impact accident severity most significantly when drivers were under 21 and over 64 years of age; in general, drivers over 45 tended to be involved in accidents resulting in slightly more fatalities than those under 45. The majority of accidents occurred within the first four hours of vehicle operation. When accidents occurred, truck drivers who had not worn seat belts were more likely to be killed than drivers who used their belts.

PHYSICAL CONDITION OF DRIVERS

In 9 out of 10 accidents, physical impairment of the commercial vehicle driver was not a causal factor, according to carriers' accounts of the accidents reported in 1990. As shown in Table 2-1, driver's condition just prior to the accident was reported as "apparently normal" in 97 percent of the accidents; 2 percent of the drivers were acknowledged to have "dozed at the wheel"; and 1 percent of the drivers were reported to have "been drinking." A very small number of drivers (11) involved in accidents were said to have been granted "waiver of certain physical defects" (49 CFR 391.49).

Table 2-1 Accidents, Fatalities, Injuries, and Property Damage By Reported Condition of Driver at Time of Accident								
CONDITION OF DRIVER	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	\$	%
APPARENTLY NORMAL	34,728	96.8	3,174	95.9	33,177	96.6	478,011,333	94.2
SICK	80	0.2	16	0.5	70	0.2	1,375,352	0.3
HAD BEEN DRINKING	230	0.6	21	0.6	229	0.7	4,876,237	1.0
DOZED AT WHEEL	616	1.7	36	1.1	639	1.9	18,527,646	3.7
MEDICAL WAIVER	11	0.0	2	0.1	6	0.0	184,829	0.0
OTHER	211	0.6	58	1.8	216	0.6	4,129,929	0.8
CONDITION NOT RPTD.	9	0.0	2	0.1	11	0.0	225,059	0.0
TOTAL	35,885	99.9	3,309	100.1	34,348	100.0	507,330,385	100.0

In reviewing the data on driver condition, it should be noted that carrier officials actually reporting the accidents to DOT were not usually present at the accident sites to observe the conditions of their drivers firsthand. Also, police reports which could help substantiate carriers' accounts of their drivers' conditions were not routinely available to DOT analysts in 1990.

Table 2-2 reveals that persons killed or injured in commercial vehicle accidents were more likely to be non-occupants of trucks (e.g., drivers and passengers in other vehicles, bicyclists, or pedestrians) than truck occupants. In 1990, 8 out of every 10 persons killed in commercial vehicle accidents were non-occupants of

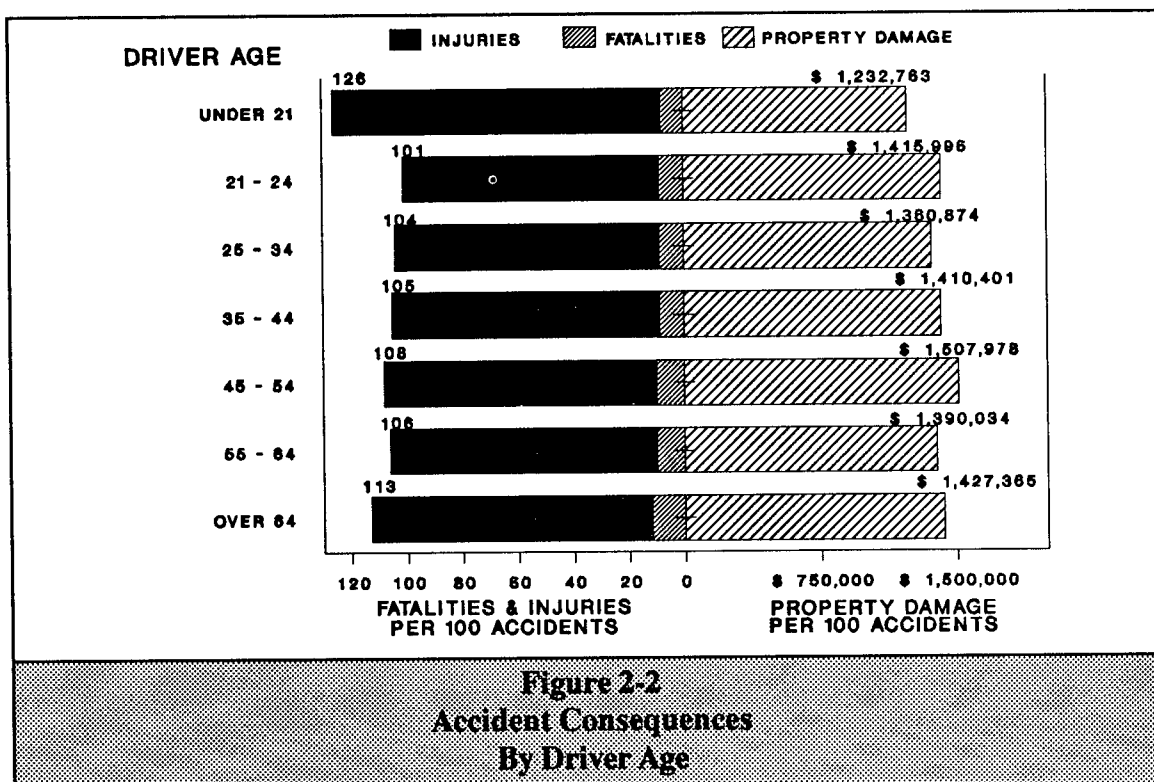
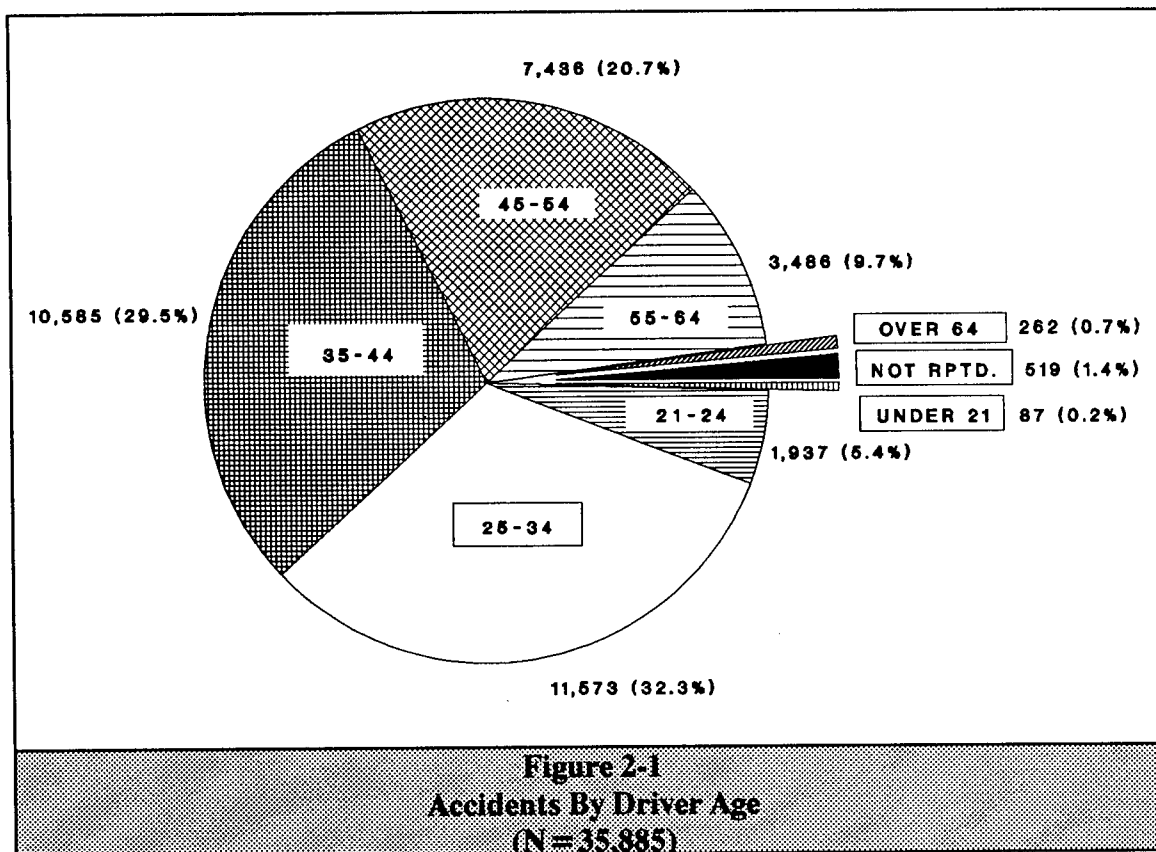
the trucks; nearly 7 out of every 10 persons injured were also non-occupants.

ACCIDENTS AND DRIVER AGE

Figure 2-1 breaks down total accidents by driver age. Not surprisingly, the bulk of the accidents (82 percent) involved drivers between the ages of 25 and 54, which is consistent with the age spread of most of the nation's professional drivers. Approximately 1 percent of the accidents involved drivers under 21 and over 64.

Figure 2-2 compares accident severity by driver age. In general, when driver age was between 21 and 44, age did not appear to significantly impact the severity of accidents (fatalities and injuries per

Table 2-2 Fatalities and Injuries Among Truck Occupants and Truck Non-Occupants				
	FATALITIES		INJURIES	
	#	%	#	%
DRIVER	399	12.1	7,866	22.9
RELIEF DRIVER	41	1.2	631	1.8
OTHER AUTHORIZED TRUCK OCCUPANT	93	2.8	1,810	5.3
UNAUTHORIZED TRUCK OCCUPANT	20	0.6	187	0.5
PERSON NOT IN TRUCK	2,756	83.3	23,854	69.4
TOTAL	3,309	100.0	34,348	99.9



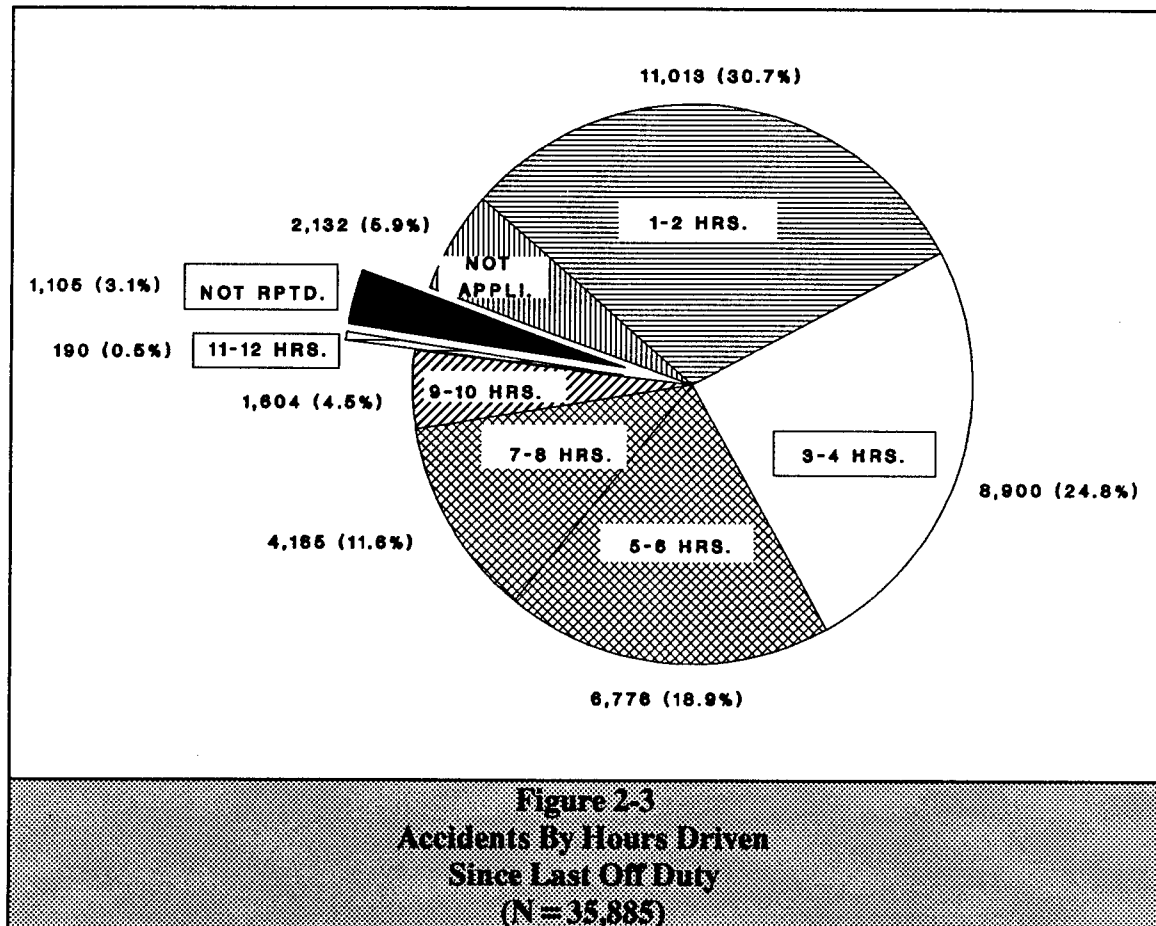
100 accidents ranged from 101 to 105). In contrast, accidents involving drivers under 21 and over 44 were, at least on the surface, more severe (fatalities/injuries per 100 accidents ranged from 108 to 126). However, it should be noted that this apparent difference in accident severity by driver age was not tested for statistical significance. Also, drivers under 21 were generally prohibited from operating commercial vehicles subject to Federal regulation (see 49 CFR 391.2 and 391.67 for exceptions).

The 1990 data, viewed in isolation, do not reveal whether drivers in some age groups are more accident-prone than

drivers in other groups. To make such a determination, data on accident occurrences by age group would need to be examined in relation to the total number of drivers within each age category.

ACCIDENTS AND HOURS DRIVEN

As driving time increased, total accidents reported declined (Figure 2-3). Hence, 31 percent of all accidents occurred within 1-2 hours after the last eight-hour period off-duty, 25 percent within 3-4 hours, 19 percent within 5-6 hours, etc.



Accidents were included in the "Not Applicable" category (Figure 2-3) if the last eight hours off-duty were accumulated in two separate rest periods (49 CFR 394.20(a), Item 11E).

Figure 2-4 compares the effect of hours driven on accident severity. In general, fatality rates increased as hours driven escalated: accidents involving truck drivers on the road for 4 hours or less resulted in 8 fatalities per 100 accidents; the fatality rate increased to 10 fatalities per 100 accidents when driving time stretched from 4-8 hours, and to 12 fatalities when driving time went from 8-12 hours. In other words, accidents were 50 percent more likely to be fatal when truck hours driven exceeded 8 than

when driving time was 4 hours or less.

Even though the relationship between hours driven and the incidence of injuries was much less pronounced, it cannot be totally ignored; accidents were 10 percent more likely to result in non-fatal injuries when truck hours driven exceeded 10 than when driving time was 4 hours or less.

Table 2-3 compares the incidence of collision and non-collision accidents relative to hours driven. In 1990, the incidence of non-collision accidents increased by 14 percent as hours driven grew from two hours or less to 11 hours or more.

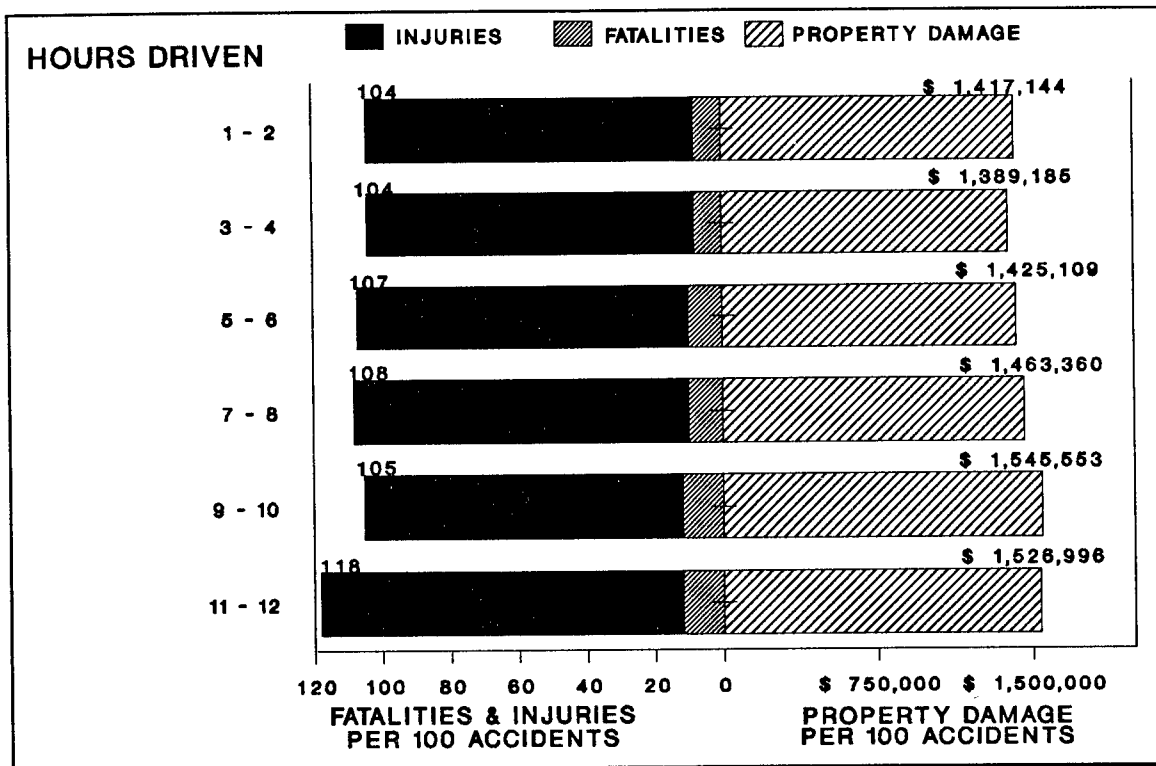


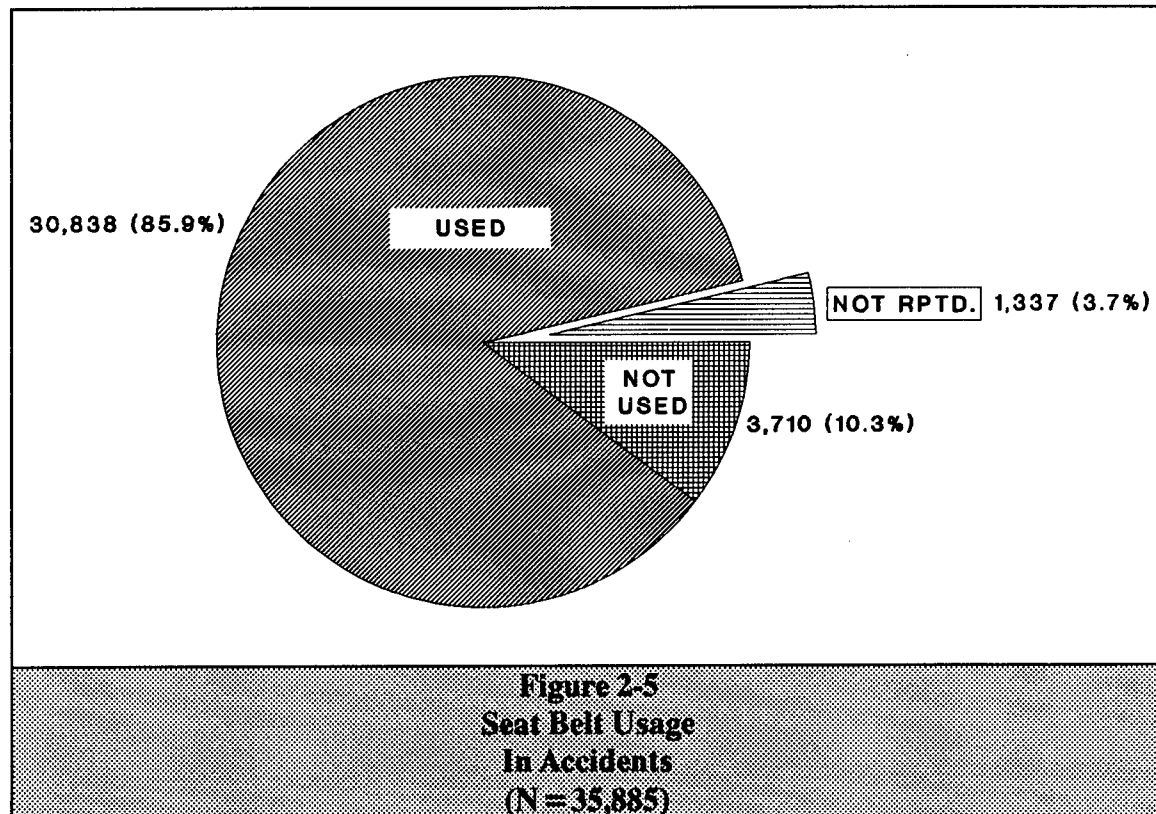
Figure 2-4
Accident Consequences
By Hours Driven

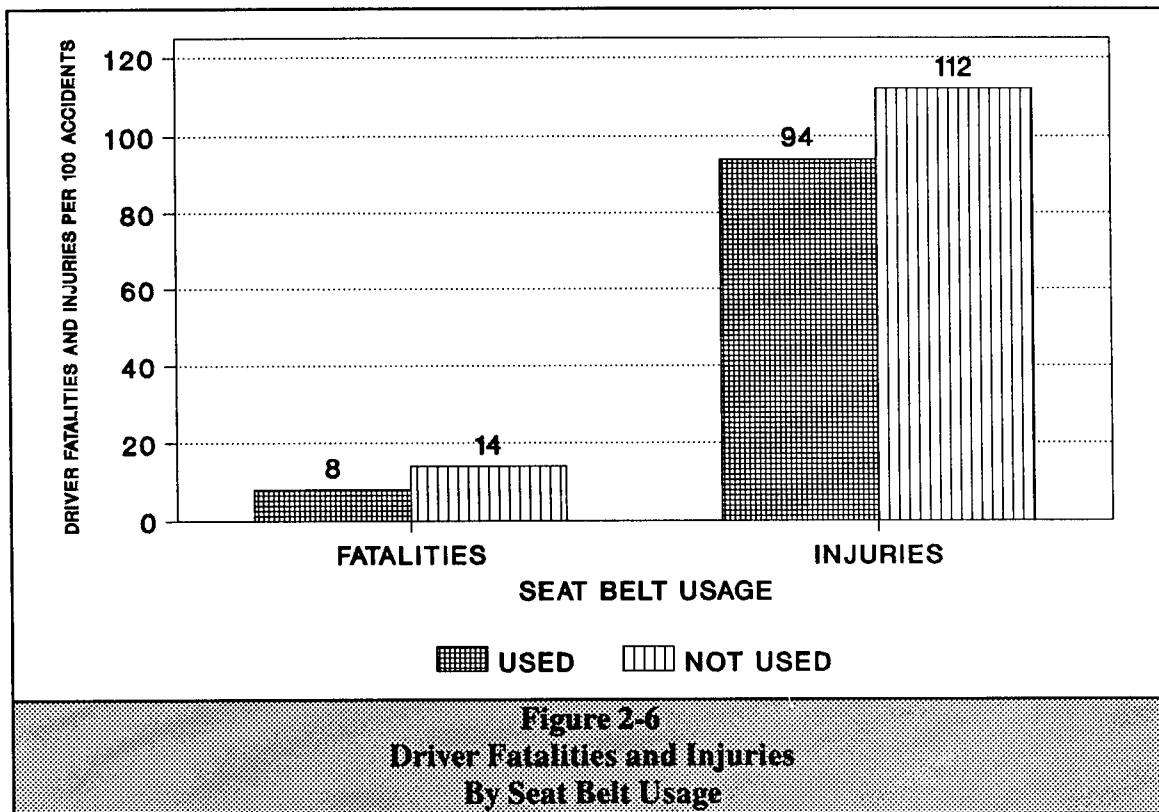
Table 2-3 Accident Type By Hours Driven								
HOURS DRIVEN	COLLISION ACCIDENTS		NON-COLLISION ACCIDENTS		NOT REPORTED		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
1-2 HOURS	8,866	80.5	2,142	19.4	5	0.0	11,013	100.0
3-4 HOURS	7,082	79.6	1,813	20.4	5	0.1	8,900	100.0
5-6 HOURS	5,392	79.6	1,379	20.4	5	0.1	6,776	100.0
7-8 HOURS	3,333	80.0	828	19.9	4	0.1	4,165	100.0
9-10 HOURS	1,271	79.2	332	20.7	1	0.1	1,604	100.0
11-12 HOURS	148	77.9	42	22.1	0	0.0	190	100.0
NOT APPLICABLE	1,720	80.7	410	19.2	2	0.1	2,132	100.0
HOURS NOT RPTD.	835	75.6	268	24.3	2	0.2	1,105	100.0
TOTAL	28,647	79.8	7,214	20.1	24	0.1	35,885	100.0

USE OF SEAT BELTS

While 98 percent of the commercial vehicles involved in reported accidents in 1990 were equipped with seat belts – and while use of seat belts by commercial drivers was mandated by Federal regulation (49 CFR 392.16) – belts were not worn in at least 10 percent of the acci-

dents, according to the carrier officials who reported the accidents (Figure 2-5). The impact of not wearing seat belts was straightforward – truck drivers who did not use the belts were 75 percent more likely to be killed. Also, drivers not using seat belts were 19 percent more likely to be injured than drivers who used their belts (Figure 2-6).





Chapter 3

THE VEHICLE

Vehicle Type and Length Gross Vehicle Weight Cargo Types Hazardous Materials Mechanical Defects

The typical commercial vehicle involved in reportable accidents was a tractor-semitrailer. The vehicle was between 55 and 69 feet long, had a gross vehicle weight between 10,000 and 80,000 pounds, and was either hauling "general freight" or reported to be empty at the time of the accident. Vehicle defects were rarely cited as the cause of the accident. When defects were acknowledged, however, brake and wheel/tire failures were most often said to have been the problem.

VEHICLE TYPE AND LENGTH

Seventy-one percent of all accidents reported in 1990 involved the tractor-semitrailer configuration (Table 3-1). These accidents accounted for 72 percent of all fatalities, 69 percent of the injuries, and 74 percent of the property damage reported during the year. In contrast, single-unit trucks accounted for 14 percent of all accidents. The tractor-semi-

trailer-full trailer configuration was involved in 4 percent of the accidents. (A visual depiction of common commercial vehicle configurations is shown in the Appendix.)

Table 3-2 summarizes the variance in total accidents and accident consequences by vehicle length. Almost half of the accidents (49 percent) involved vehicles between 55 and 64 feet in length, and approximately 1 out of 4 (25 percent) of the accidents involved vehicles under 55 feet. Vehicle configurations in excess of 64 feet accounted for just over 1 in 5 accidents (22 percent).

Figure 3-1 examines the relationship between the length of commercial vehicles involved in accidents and accident severity. Interestingly, shorter vehicles tended to be involved in accidents which produced the highest frequency of fatalities and injuries.

Table 3-1
Accidents, Fatalities, Injuries, and Property Damage
By Vehicle Configuration

VEHICLE CONFIGURATION	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	\$	%
TRUCK	5,062	14.1	428	12.9	5,496	16.0	52,207,994	10.3
TRUCK-FULL TRAILER	422	1.2	62	1.9	391	1.1	6,309,714	1.2
TRUCK-OTHER	145	0.4	14	0.4	114	0.3	2,036,916	0.4
TRACTOR	2,255	6.3	197	6.0	2,353	6.9	30,836,891	6.1
TRACTOR-SEMI-TRAILER	25,439	70.9	2,382	72.0	23,590	68.7	376,697,318	74.3
TRACTOR-SEMI-FULL	1,420	4.0	106	3.2	1,199	3.5	21,961,481	4.3
TRACTOR-SEMI-FL-FL*	77	0.2	3	0.1	64	0.2	1,413,715	0.3
TRACTOR-OTHER	544	1.5	70	2.1	628	1.8	9,442,837	1.9
OTHER	433	1.2	33	1.0	415	1.2	5,007,686	1.0
CONFIG. NOT RPTD.	88	0.2	14	0.4	98	0.3	1,415,833	0.3
TOTAL	35,885	100.0	3,309	100.0	34,348	100.0	507,330,385	100.1

*FL = FULL

Table 3-2
Accident Class Totals
By Vehicle Length

VEHICLE LENGTH	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
UNDER 20 FEET	90	3.4	1,279	6.5	511	3.7	1,880	5.2
20 - 34 FEET	256	9.8	2,213	11.3	1,085	7.9	3,554	9.9
35 - 49 FEET	129	4.9	1,121	5.7	682	5.0	1,932	5.4
50 - 54 FEET	158	6.0	920	4.7	590	4.3	1,668	4.6
55 - 59 FEET	602	23.0	4,128	21.1	2,671	19.4	7,401	20.6
60 - 64 FEET	735	28.1	5,266	27.0	4,204	30.6	10,205	28.4
65 - 69 FEET	414	15.8	3,151	16.1	2,832	20.6	6,397	17.8
OVER 69 FEET	105	4.0	795	4.1	767	5.6	1,667	4.6
LENGTH NOT RPTD.	130	5.0	660	3.4	391	2.8	1,181	3.3
TOTAL	2,619	100.0	19,533	99.9	13,733	99.9	35,885	99.8

GROSS VEHICLE WEIGHT

The gross vehicle weight (GVW) of commercial vehicles involved in accidents reported in 1990 ranged from under 10,000 pounds to more than 80,000 pounds. Table 3-3 shows that more than 39 percent of all accidents involved vehicles having GVWs between 62,500 and 80,000 pounds; another 22 percent involved GVWs between 27,500 and 45,000 pounds. The data do not reveal whether vehicles in these two weight categories were actually more accident prone, or whether the majority of com-

mercial vehicles (when loaded) fell into these weight categories, and thus would be expected to be involved in a disproportionate number of total accidents.

There appears to be an inverse relationship between GVW and accident fatalities and injuries. In 1990, as GVW increased, the fatality/injury ratio tended to decrease (see Figure 3-2). For instance, accidents involving commercial vehicles with GVWs over 80,000 pounds resulted in 17 percent fewer fatalities/injuries (91 per 100 accidents) than accidents of vehicles under 10,000 pounds (109 per 100 accidents).

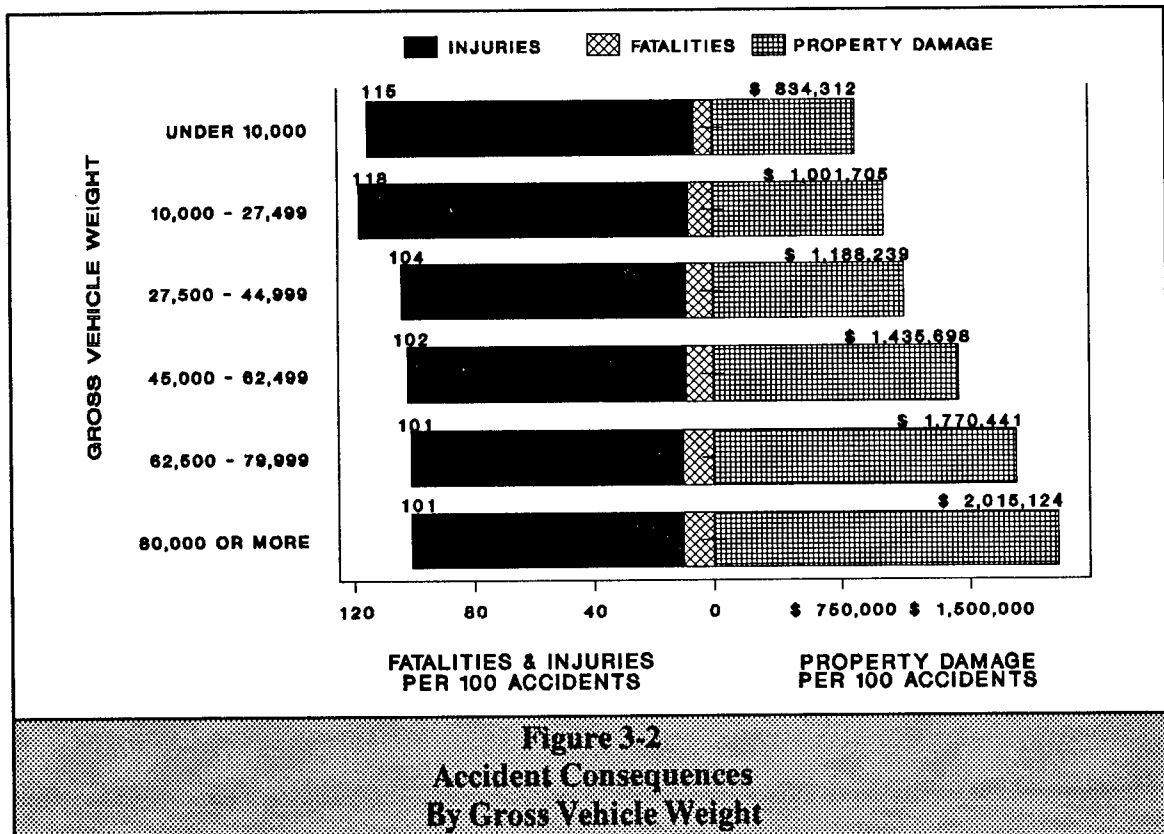
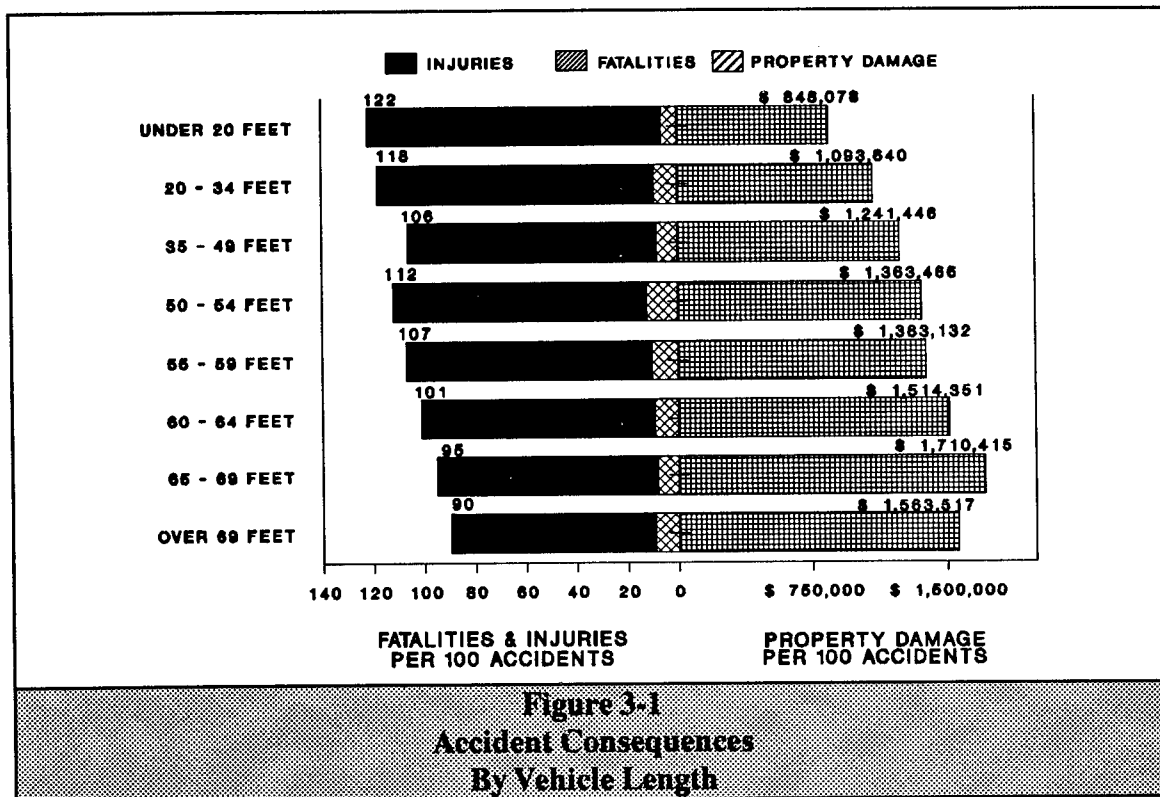


Table 3-3 Accident Class Totals By Gross Vehicle Weight								
GROSS VEHICLE WEIGHT IN LBS.	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
UNDER 10,000	60	2.3	799	4.1	334	2.4	1,193	3.3
10,000-27,499	294	11.2	3,005	15.4	1,413	10.3	4,712	13.1
27,500-44,999	608	23.2	4,338	22.2	3,099	22.6	8,045	22.4
45,000-62,499	364	13.9	2,762	14.1	2,050	14.9	5,176	14.4
62,500-79,999	830	31.7	5,610	28.7	4,557	33.2	10,997	30.6
80,000 OR MORE	193	7.4	1,279	6.5	1,087	7.9	2,559	7.1
WEIGHT NOT RPTD.	270	10.3	1,740	8.9	1,193	8.7	3,203	8.9
TOTAL	2,619	100.0	19,533	99.9	13,733	100.0	35,885	99.8

CARGO TYPES

Table 3-4 displays accident class totals by cargo type. In 1990, 33 percent of the commercial vehicles involved in reported accidents were carrying "general freight" at the time of the accidents; 19 percent of the vehicles were empty. Accident class totals, when examined by cargo type, tended to mirror the percentage breakdown of total accidents by cargo type. For example, "solids

in bulk" were involved in 2.3 percent of all accidents and 1.9, 2.3, and 2.4 percent of all fatal, injury, and property damage accidents, respectively.

When accidents did occur, the likelihood that these accidents would result in fatalities appeared to vary by cargo classification (Table 3-5). For instance, commercial vehicles carrying liquids or gases in bulk, explosives, or farm products were each involved in accidents

Table 3-4 Accident Class Totals By Cargo Classification								
CARGO CLASSIFICATION	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
GENERAL FREIGHT	680	26.0	6,360	32.6	4,704	34.3	11,744	32.7
HOUSEHOLD GOODS	60	2.3	471	2.4	418	3.0	949	2.6
METAL PRODUCTS	125	4.8	821	4.2	590	4.3	1,536	4.3
HEAVY MACHINERY	37	1.4	257	1.3	284	2.1	578	1.6
MOTOR VEHICLES	21	0.8	189	1.0	203	1.5	413	1.2
DRIVEAWAY-TOWAWAY	5	0.2	64	0.3	47	0.3	116	0.3
GASES IN BULK	13	0.5	67	0.3	47	0.3	127	0.4
SOLIDS IN BULK	51	1.9	458	2.3	332	2.4	841	2.3
LIQUIDS IN BULK	161	6.1	872	4.5	544	4.0	1,577	4.4
EXPLOSIVES	5	0.2	26	0.1	16	0.1	47	0.1
LOGS/POLES/LUMBER	64	2.4	398	2.0	276	2.0	738	2.1
EMPTY	515	19.7	3,760	19.2	2,505	18.2	6,780	18.9
REFRIGERATED FOODS	218	8.3	1,329	6.8	1,158	8.4	2,705	7.5
MOBILE HOME	5	0.2	35	0.2	50	0.4	90	0.3
FARM PRODUCTS	61	2.3	282	1.4	260	1.9	603	1.7
OTHER	557	21.3	3,897	20.0	2,132	15.5	6,586	18.4
CARGO NOT RPTD.	41	1.6	247	1.3	167	1.2	455	1.3
TOTAL	2,619	100.0	19,533	99.9	13,733	99.9	35,885	100.1

Table 3-5 Percent Fatal Accidents By Cargo Classification			
CARGO CLASSIFICATION	FATAL ACCIDENTS	TOTAL ACCIDENTS	% FATAL ACCIDENTS
GENERAL FREIGHT	680	11,744	5.8
HOUSEHOLD GOODS	60	949	6.3
METAL PRODUCTS	125	1,536	8.1
HEAVY MACHINERY	37	578	6.4
MOTOR VEHICLES	21	413	5.1
DRIVEAWAY-TOWAWAY	5	116	4.3
GASES IN BULK	13	127	10.2
SOLIDS IN BULK	51	841	6.1
LIQUIDS IN BULK	161	1,577	10.2
EXPLOSIVES	5	47	10.6
LOGS/POLES/LUMBER	64	738	8.7
EMPTY	515	6,780	7.6
REFRIGERATED FOODS	218	2,705	8.1
MOBILE HOME	5	90	5.6
FARM PRODUCTS	61	603	10.1
OTHER	557	6,586	8.5
CARGO NOT RPTD.	41	455	9.0
TOTAL	2,619	35,885	7.3

approximately 10 percent of the time. In contrast, commercial vehicles carrying driveaway/towaway vehicles were involved in accidents which resulted in fatalities about 4 percent of the time.

HAZARDOUS MATERIALS

Approximately 5 percent of the accidents reported during 1990 involved commercial vehicles transporting hazardous materials, as defined by the *Hazardous Materials Regulations* (49 CFR 170 – 177). Table 3-6 shows that accidents in which hazardous materials were present resulted in 217 fatalities, 1,798 injuries, and property damage estimated at \$37

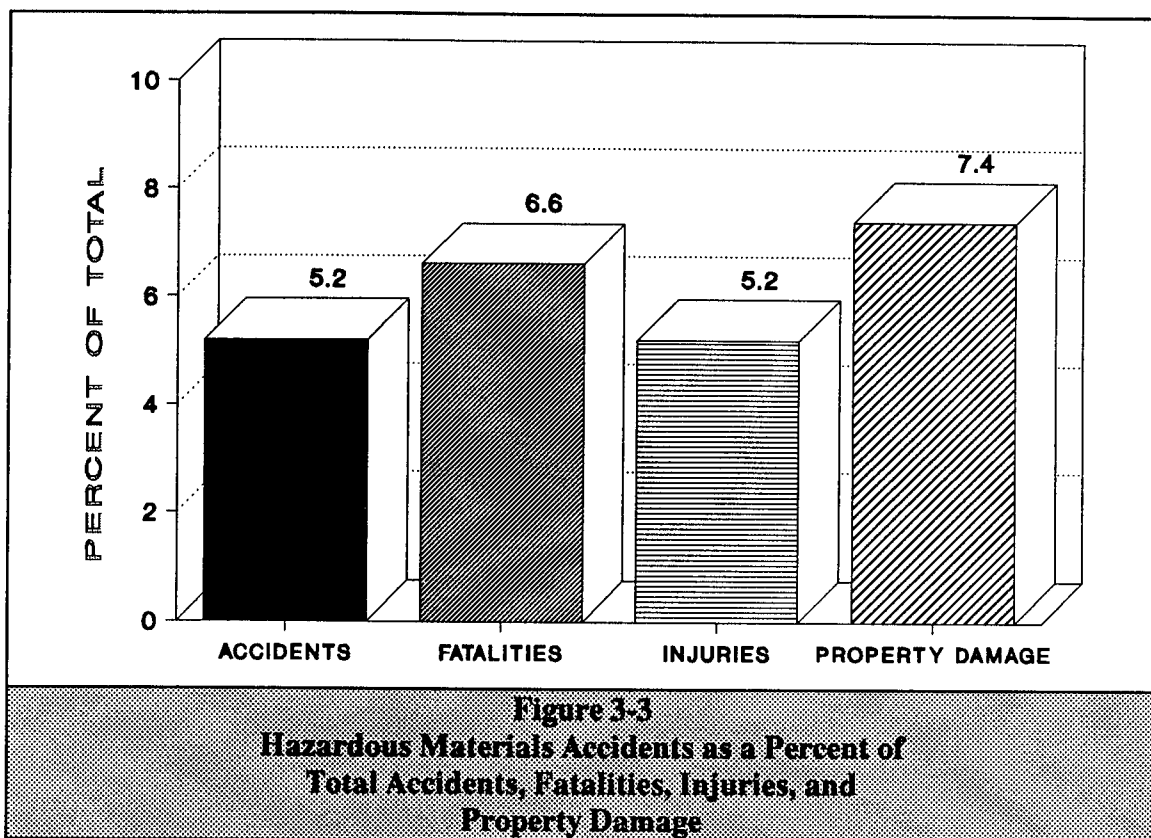
million. Nearly all the reported accidents involved for-hire carriers—private carriers reported only 19 accidents in which hazardous materials were present, down by nearly 50 percent from 1989.

Figure 3-3 compares the proportion of 1990 accidents, fatalities, injuries, and property damage involving hazardous materials.

MECHANICAL DEFECTS

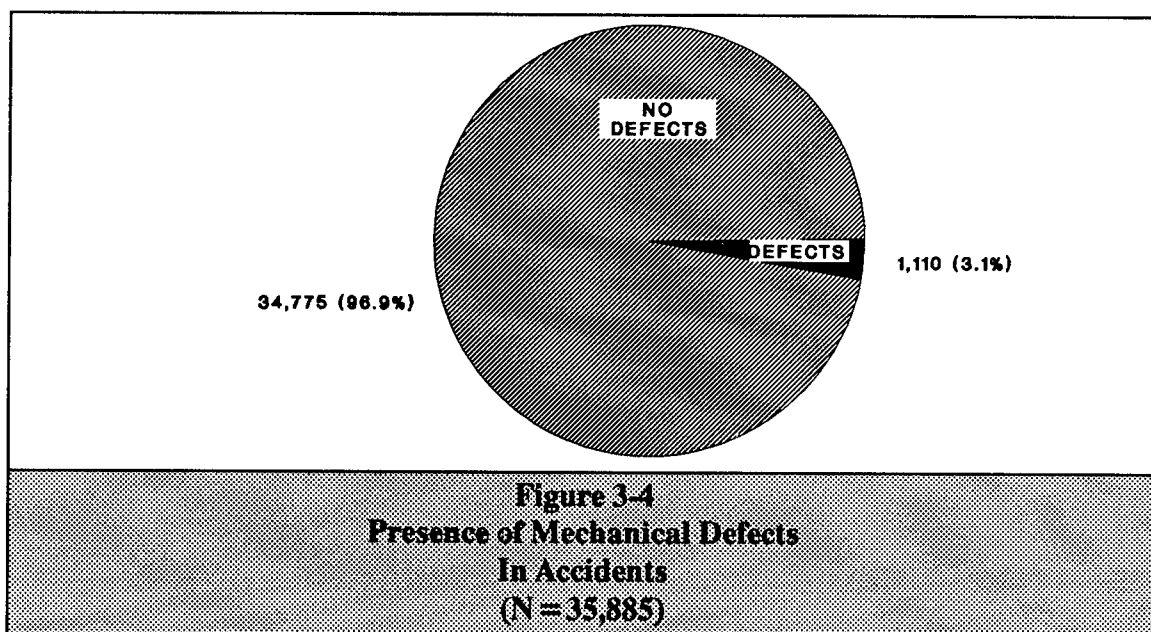
Three percent of all carriers reporting accidents during 1990 said that their vehicles exhibited mechanical defects or failures at the time of the accidents

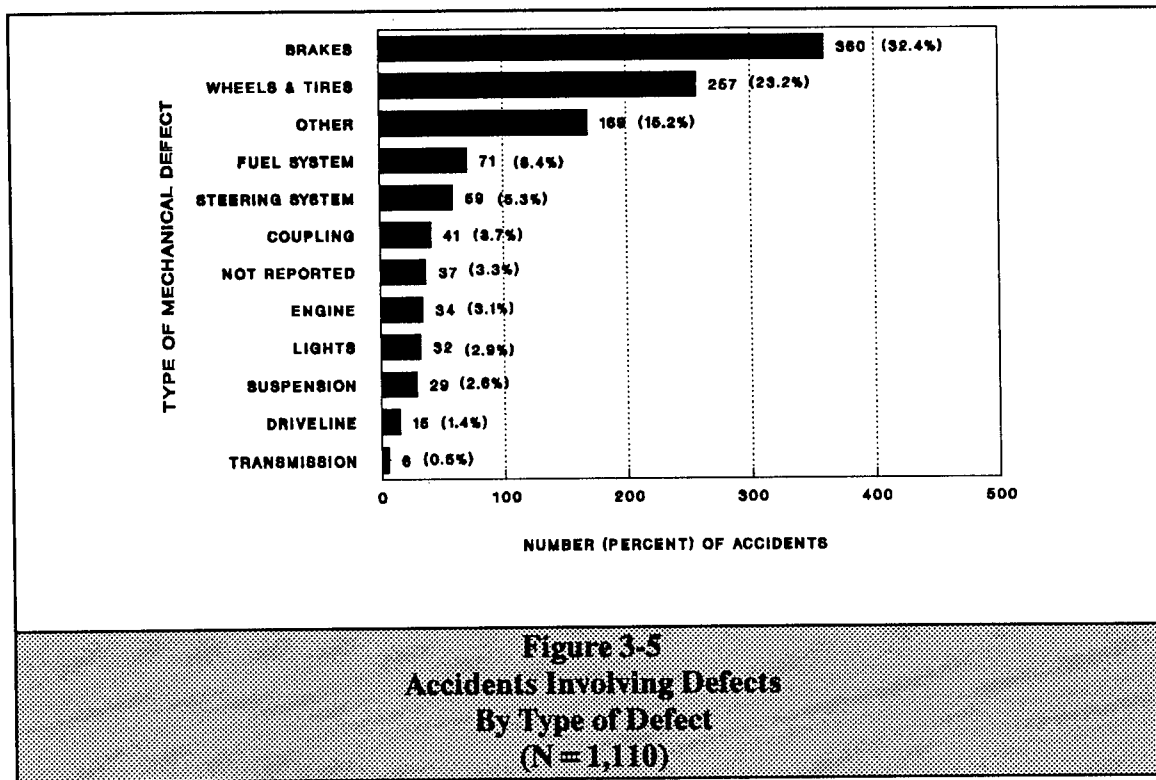
Table 3-6 Accidents, Fatalities, Injuries, and Property Damage Involving Hazardous Materials By Carrier Type								
CARRIER TYPE	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	\$	%
FOR-HIRE	1,832	98.8	215	99.1	1,769	98.4	37,015,855	98.9
PRIVATE	19	1.0	1	0.5	24	1.3	398,203	1.1
TYPE NOT RPTD.	3	0.2	1	0.5	5	0.3	18,400	0.0
TOTAL	1,854	100.0	217	100.1	1,798	100.0	37,432,458	100.0



(Figure 3-4). Figure 3-5 indicates that when mechanical defects were cited, brake failures were most often said to be

the cause of the accidents (32 percent), followed by problems with wheels and tires (23 percent).





Chapter 4 THE ACCIDENT SETTING

Accident Locale Environmental Conditions Time of Day Day of Week and Month of Year

The typical accident occurred in winter, on a weekday afternoon. At the time of the accident, weather and road conditions were favorable. The accident happened while the truck was travelling on a divided highway through a rural district. When the accident occurred, the truck driver was probably not seriously hurt, but one person not in the truck was injured or, even occasionally, killed.

ACCIDENT LOCALE

Figure 4-1 shows that a larger proportion of the commercial vehicle accidents reported in 1990 occurred in rural districts (53 percent) than in business districts (38 percent). Table 4-1 similarly indicates that more accidents happened on divided highways (49 percent) than on undivided highways (42 percent).

Table 4-1 also reveals, however, that a larger proportion of fatal accidents occurred on undivided highways (49 percent) than on divided highways (46 percent). Furthermore, the data indicate

that accidents, when they occurred, were more likely to be fatal on undivided highways than on divided highways. In 1990, 9 percent of all commercial vehicle accidents on undivided highways were fatal; less than 7 percent of the accidents on divided highways were fatal.

Six percent of the reported accidents occurred on expressway entrance and exit ramps (Table 4-2). Whereas 7.3 percent of all commercial vehicle accidents were fatal, only 4.3 percent of all ramp accidents were fatal. Hence, ramp accidents were 43 percent less likely to generate fatalities than commercial vehicle accidents generally.

ENVIRONMENTAL CONDITIONS

Figure 4-2 examines the relationship between light, weather, and road surface conditions. When a carrier reported rain, snow, sleet, fog, or smog at the time of the accident, the weather conditions were classified as "unfavorable." Similarly,

Accidents Reported by Motor Carriers of Property 1990

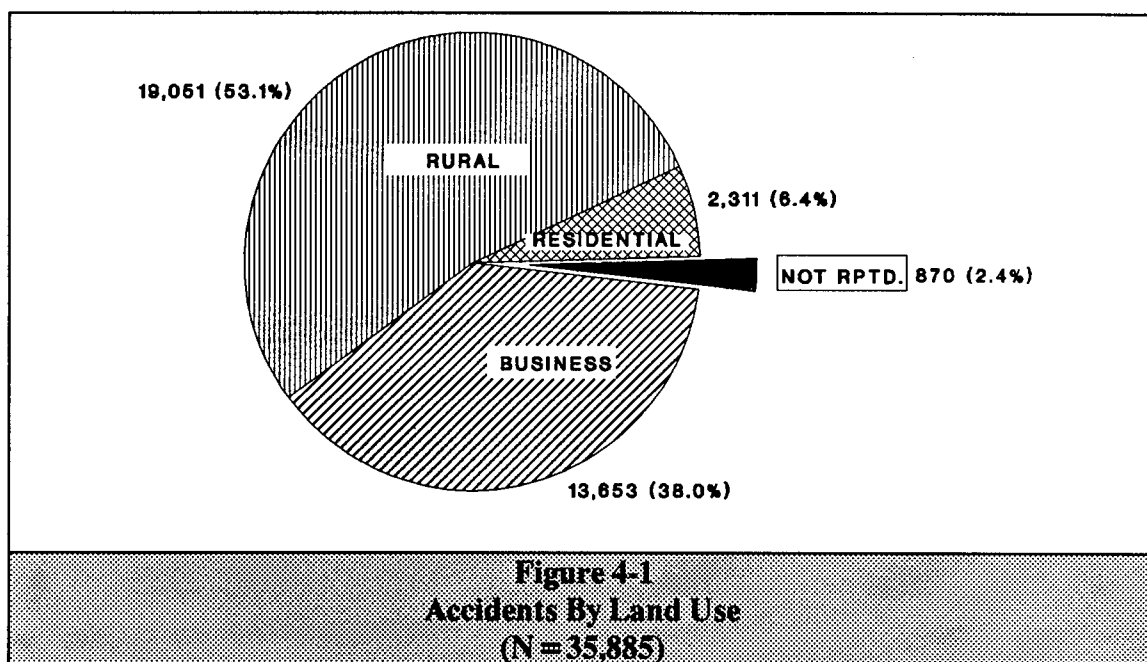


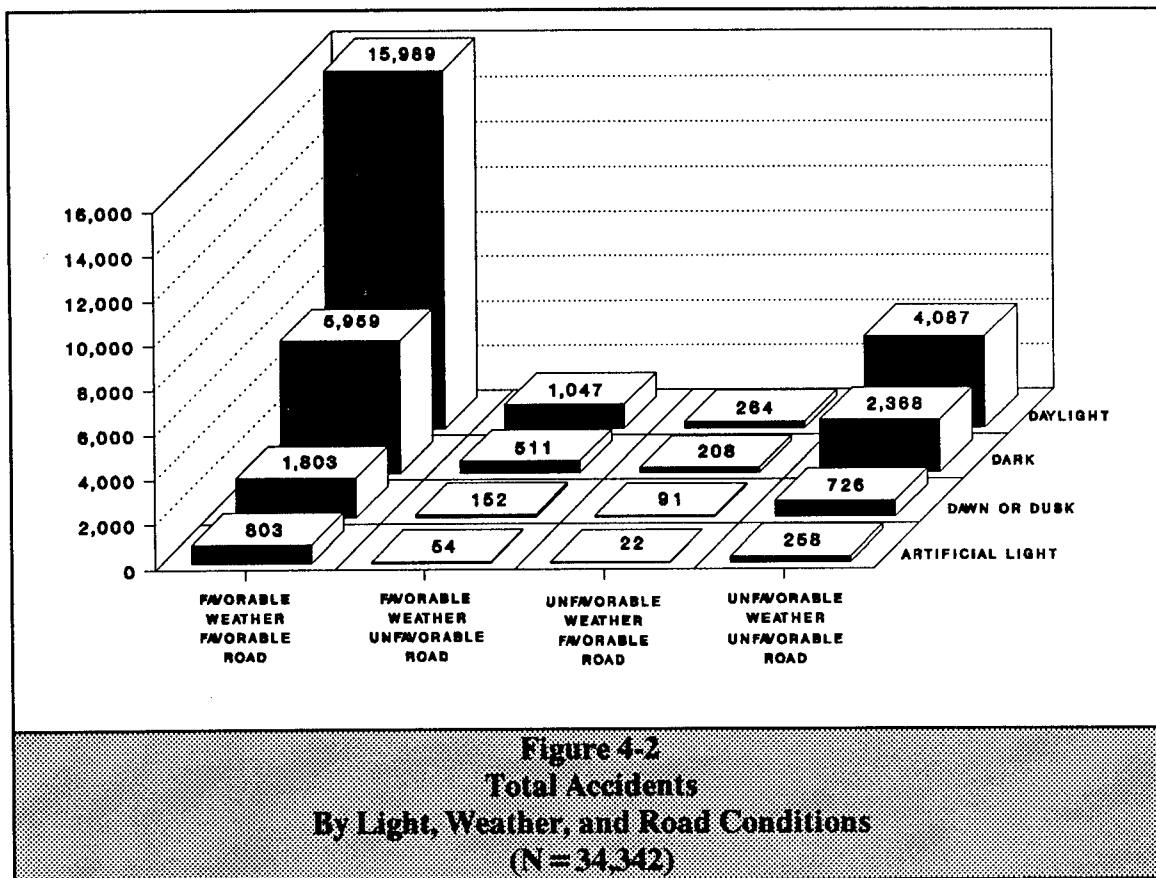
Table 4-1 Accident Class Totals By Highway Type								
HIGHWAY TYPE	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
DIVIDED	1,195	45.6	10,018	51.3	6,513	47.4	17,726	49.4
UNDIVIDED	1,271	48.5	8,343	42.7	5,316	38.7	14,930	41.6
TYPE NOT RPTD.	153	5.8	1,172	6.0	1,904	13.9	3,229	9.0
TOTAL	2,619	99.9	19,533	100.0	13,733	100.0	35,885	100.0

Table 4-2 Expressway Ramp Accidents								
	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
ENTRANCE RAMP	51	4.4	652	56.0	461	39.6	1,164	100.0
EXIT RAMP	47	4.3	618	56.7	425	39.0	1,090	100.0
TOTAL RAMP	98	4.3	1,270	56.3	886	39.3	2,254	99.9
ALL ACCIDENTS	2,619	7.3	19,533	54.4	13,733	38.3	35,885	100.0

when a carrier characterized roads as wet, snowy, or icy, road surface conditions were classified as "unfavorable."

Of all commercial vehicle accidents for which environmental conditions were

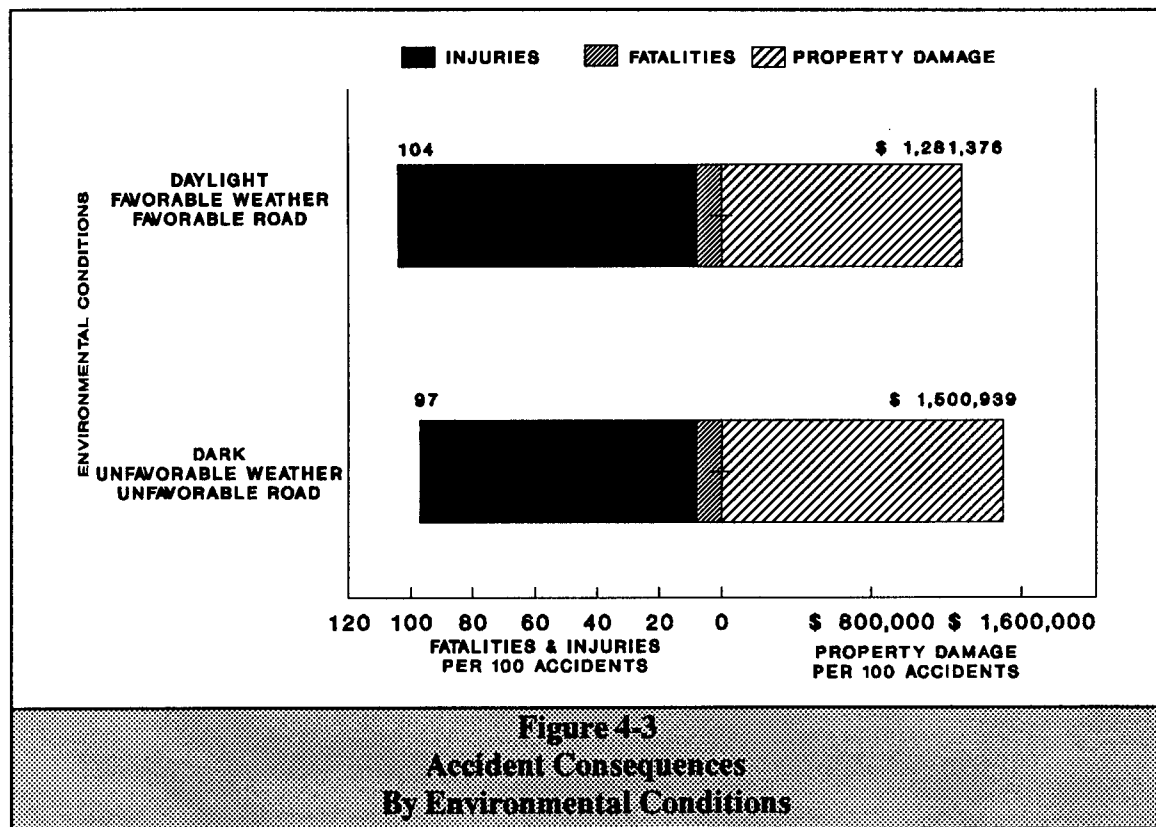
reported in 1990, 62 percent occurred in daylight, 26 percent in the dark, 8 percent at dawn or dusk, and 3 percent under artificial light. Approximately 7 out of 10 accidents occurred under favorable weather/favorable road conditions.



In fact, nearly 1 out of every 2 reported accidents took place in daylight under favorable weather/favorable road conditions.

Figure 4-3 compares accident consequences generated during daylight under favorable weather/favorable road conditions to those produced in the dark under unfavorable weather/unfavorable road conditions. Interestingly, accidents which occurred under ideal environmental conditions resulted in more fatalities/injuries (104 per 100 accidents) than did accidents which happened under adverse conditions (97 per 100 accidents). Was this because drivers were more cautious—and drove slower—

under adverse environmental conditions so that accidents, even when they occurred, were less severe? Or was it simply that there was less traffic on the highways—and consequently fewer opportunities for collisions—when environmental conditions were poorest? In examining these data, it should be remembered that they are based on the environmental conditions occurring at the time of the accidents, as reported by the carriers themselves. There is, of course, the possibility that reports of favorable weather/favorable road conditions were exaggerated, given that the *FMCSRs* (49 CFR 392.14) specifically prohibit the operation of commercial vehicles under "sufficiently dangerous" conditions.



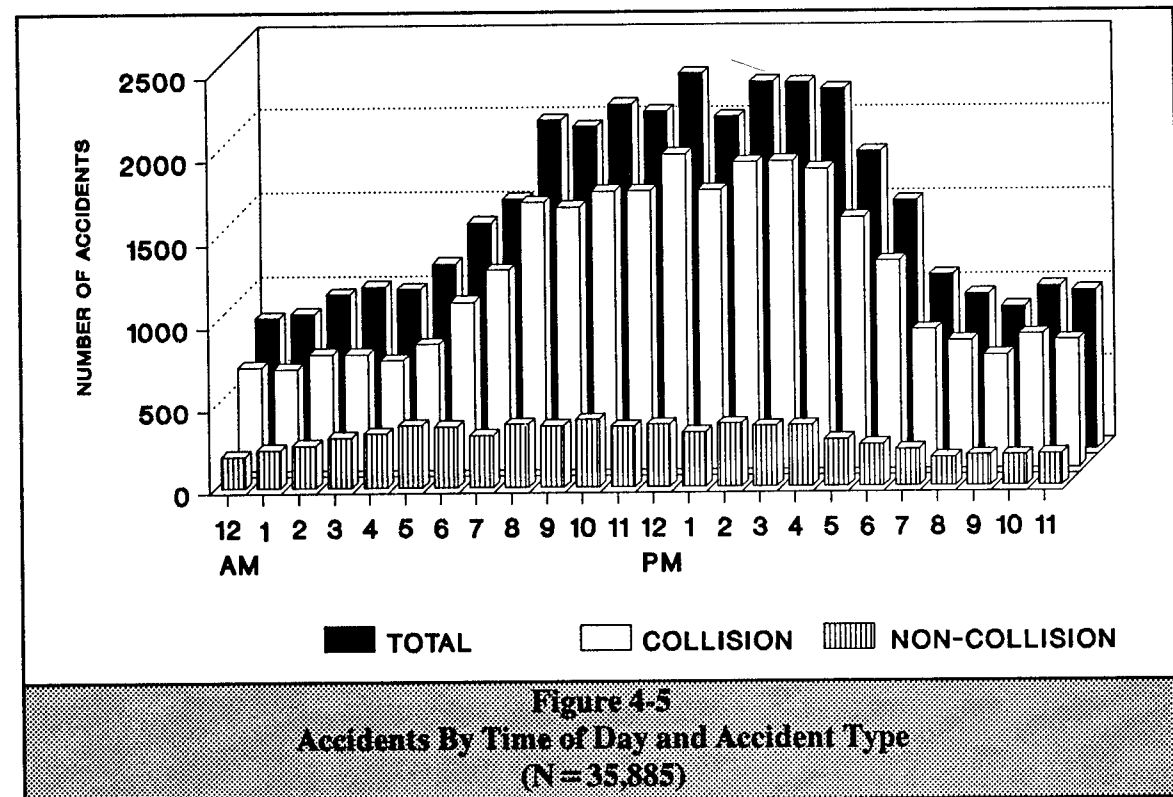
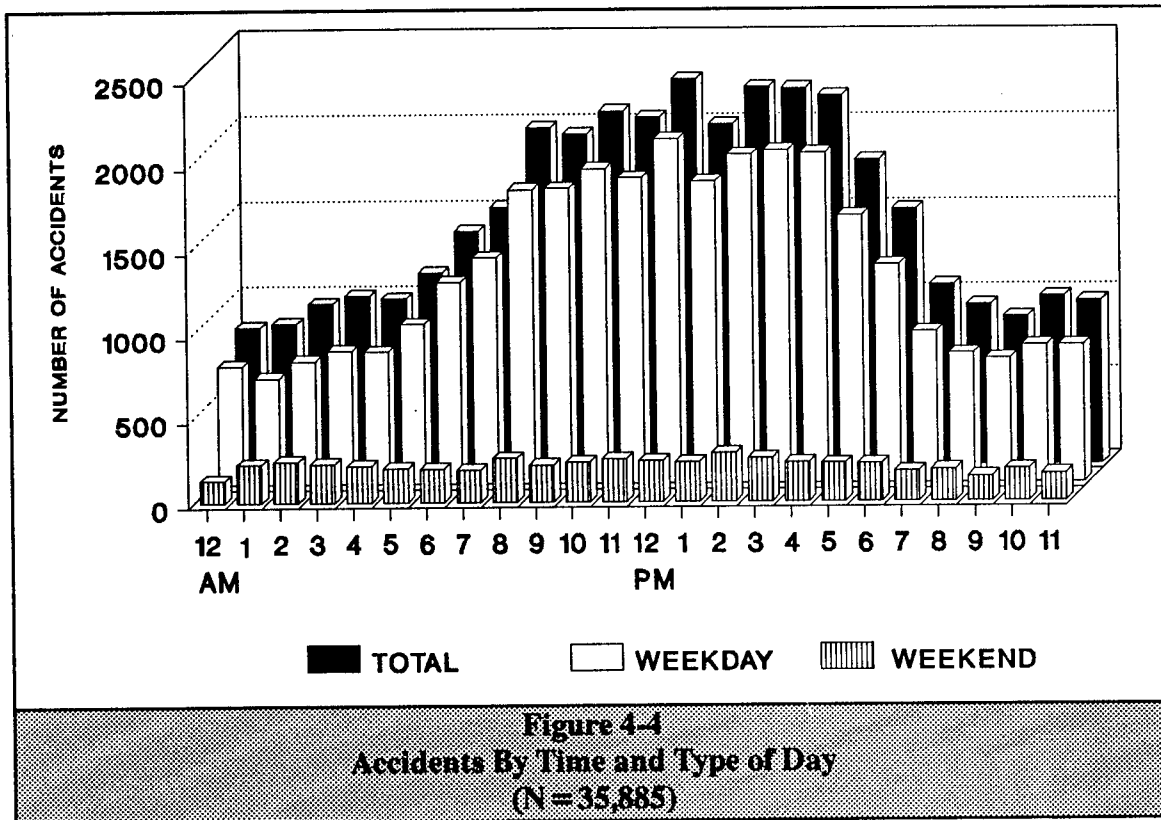
TIME OF DAY

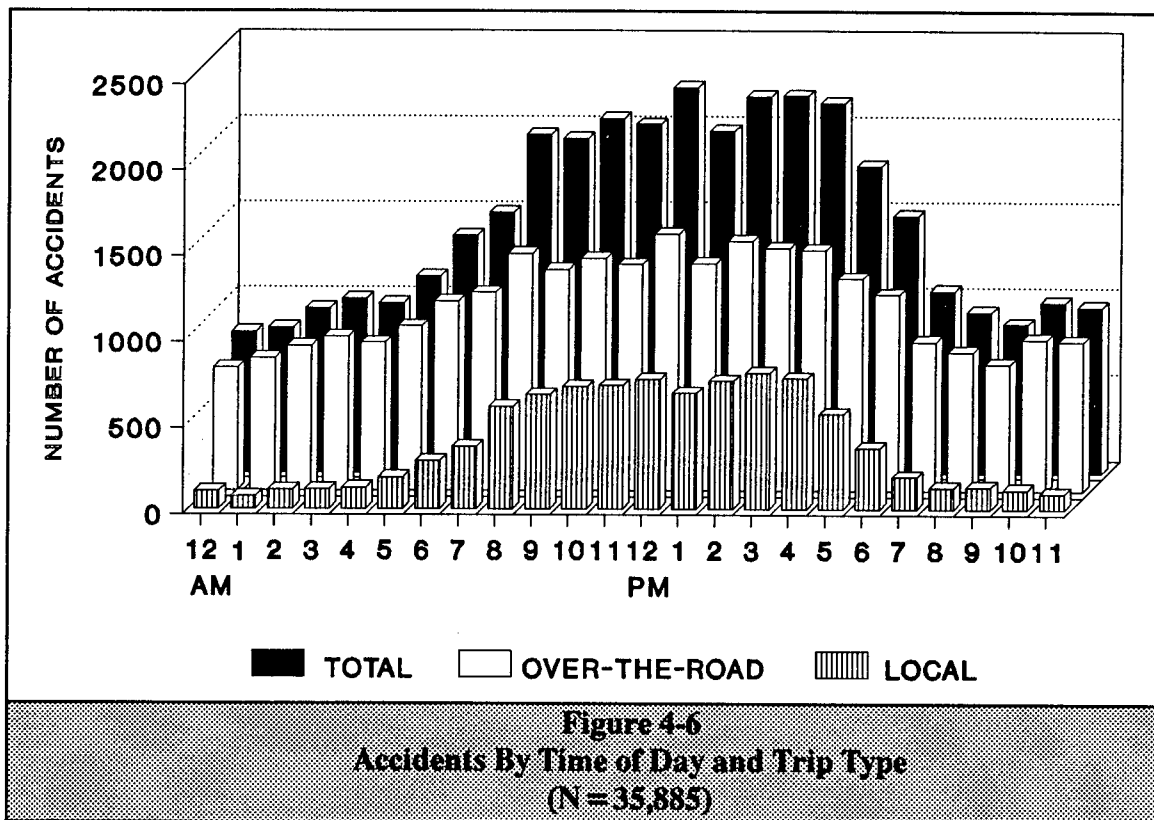
Nearly 4 out of every 5 commercial vehicle accidents reported in 1990 occurred between 5 a.m. and 8 p.m., the hours during which traffic normally flowed its heaviest. The fewest accidents occurred during the evening and early morning hours, 8 p.m to 5 a.m.

Figures 4-4 through 4-6 compare accident experience by time of day. On weekdays, total accidents appeared to fluctuate with the general flow of traffic, peaking at noon and again from 2-4 p.m. (Figure 4-4); not surprisingly, counts of weekend accidents showed less variability, regardless of time of day. Collision accidents (Figure 4-5) peaked between 12 noon and 4 p.m., whereas non-collision accident counts were

uniformly high from 5 a.m. to 4 p.m. Reported accidents involving both over-the-road vehicles and vehicles transporting goods locally occurred in much greater numbers during the day than at night (Figure 4-6). This was less true for over-the-road accidents, however. While the number of accidents involving local vehicles was over seven times higher at noon than at midnight, over-the-road accidents were two times higher at noon than at midnight. This lower variability in over-the-road accidents may reflect the round-the-clock orientation of long-distance haulers.

Figure 4-7 examines fatalities/injuries for truck occupants and truck non-occupants by time of day. In general, the data show that truck occupants were most likely to be killed or injured in accidents which





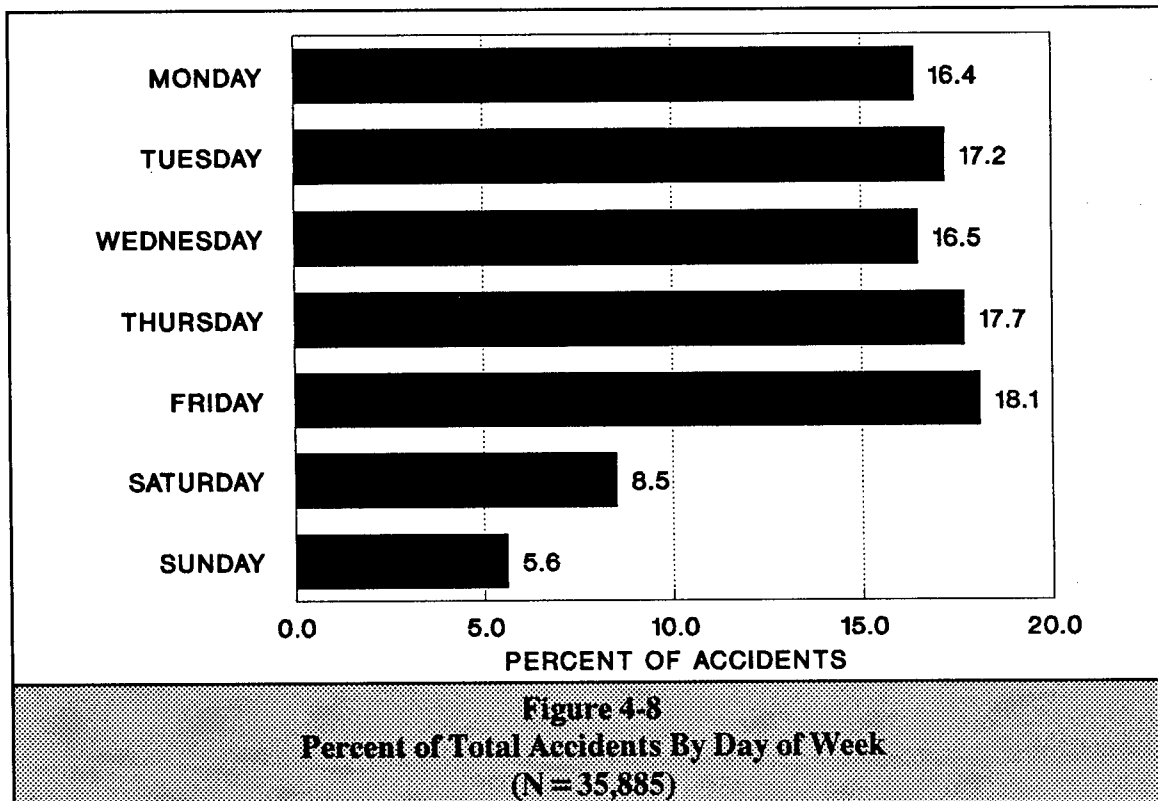
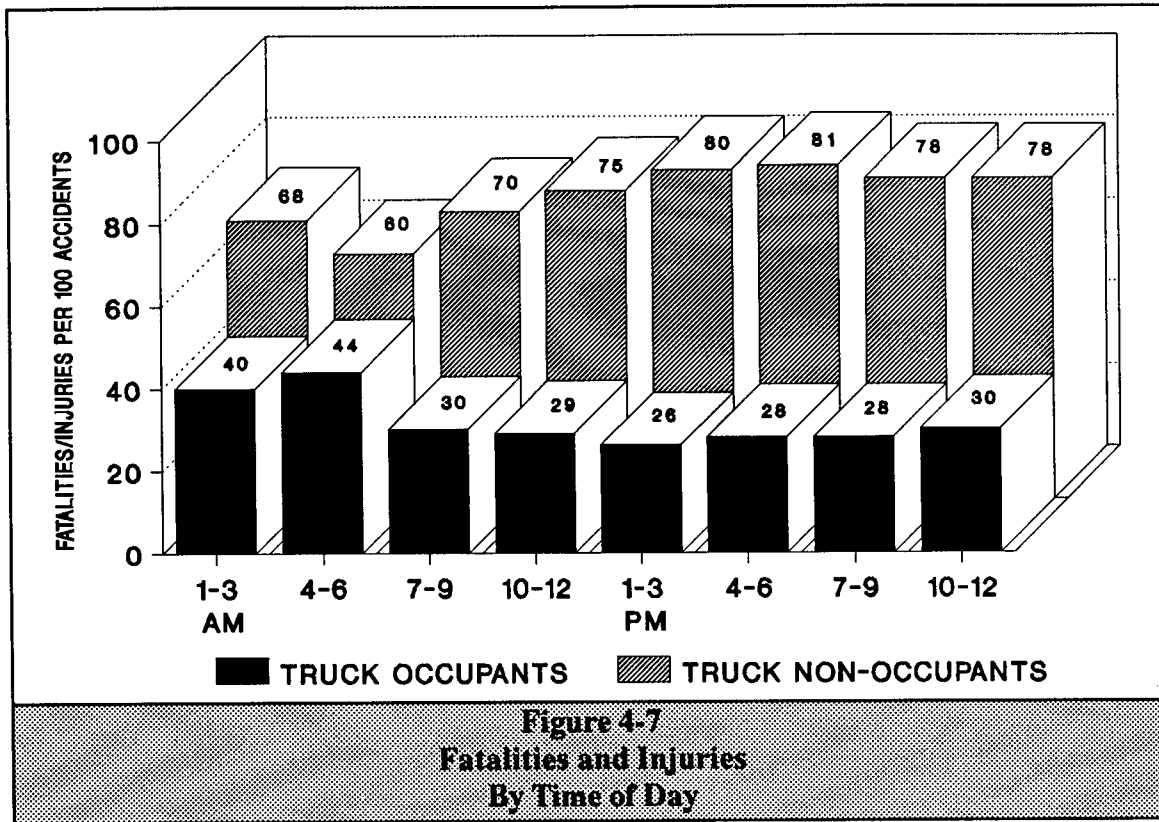
occurred during the predawn hours when, percentage-wise, there were more non-collision accidents. For instance, truck drivers were 56 percent more likely to be killed or injured in accidents which happened between 1 and 6 a.m. than between 1 and 6 p.m. The pattern for truck non-occupants was different: persons not in the truck at the time of the accident were killed or injured at a rate 26 percent higher between 1 and 6 p.m. than between 1 and 6 a.m.

commercial vehicles occurred on Saturdays and Sundays than on other days of the week (Figure 4-8). Also, the greatest numbers of accidents were reported for the months of January, August, and December; the fewest accidents occurred in April and September (Figure 4-9).

Table 4-3 displays total accidents, fatalities, injuries, and property damage by carrier type and month.

DAY OF WEEK AND MONTH OF YEAR

Figures 4-8 and 4-9 compare the percentages of 1990 accidents by day of week and month of year, respectively. As expected, considerably fewer accidents involving



Accidents Reported by Motor Carriers of Property 1990

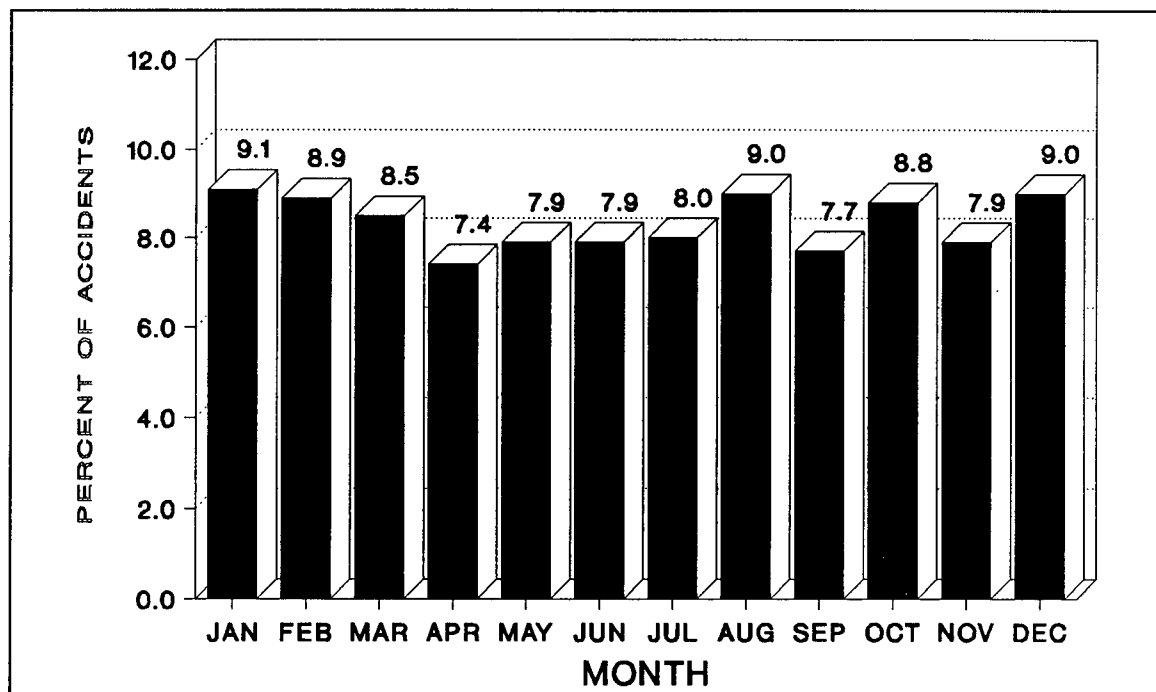


Figure 4-9
Percent of Total Accidents
By Month
(N=35,885)

Table 4-3
Accidents, Fatalities, Injuries, and Property Damage
By Carrier Type and Month

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ACCIDENTS													
FOR-HIRE	3,208	3,128	3,009	2,597	2,788	2,771	2,821	3,145	2,897	3,083	2,745	3,172	35,142
PRIVATE	55	59	54	47	58	46	60	89	59	72	79	51	709
TYPE NOT RPTD.	0	2	3	1	4	1	1	3	4	9	0	6	34
TOTAL	3,263	3,189	3,066	2,645	2,828	2,818	2,882	3,217	2,760	3,164	2,824	3,229	35,885
FATALITIES													
FOR-HIRE	284	235	243	222	257	257	292	305	257	288	249	341	3,208
PRIVATE	4	11	6	10	5	10	11	7	5	12	12	7	100
TYPE NOT RPTD.	0	0	1	0	0	0	0	0	0	0	0	0	1
TOTAL	288	246	250	232	262	267	303	312	262	278	261	348	3,309
INJURIES													
FOR-HIRE	2,887	2,905	2,700	2,485	2,878	2,782	2,854	3,195	2,838	2,958	2,531	2,963	33,854
PRIVATE	53	50	40	44	69	48	76	73	81	43	64	41	662
TYPE NOT RPTD.	0	4	6	0	7	0	0	1	4	10	0	0	32
TOTAL	3,040	2,959	2,746	2,509	2,752	2,830	2,930	3,269	2,703	3,011	2,595	3,004	34,348
PROPERTY DAMAGE*													
FOR-HIRE	47,518	42,069	44,254	36,867	39,206	38,403	39,026	41,482	40,787	42,743	37,590	45,093	495,036
PRIVATE	799	937	636	875	1,296	965	890	1,534	711	1,239	1,207	840	12,029
TYPE NOT RPTD.	0	18	32	5	26	8	22	21	29	67	0	38	264
TOTAL	48,315	43,022	44,922	37,747	40,528	39,376	39,938	43,037	41,527	44,049	38,797	46,071	507,329

* In thousands (000's) of dollars.

Chapter 5

THE ACCIDENT

Accident Type Overview Collision Accidents Non-Collision Accidents

The typical accident entailed a collision between a commercial vehicle and automobile. More than 6 out of every 10 collisions resulted in one or more fatalities or injuries. In general, accident severity appeared to be determined by a variety of factors, including what the commercial vehicle was doing just prior to the accident. For instance, when the truck ventured into an opposing lane of traffic, the ensuing collision tended to be the most severe.

ACCIDENT TYPE OVERVIEW

Almost 80 percent of the accidents reported in 1990 involved collisions. Overall, collision accidents were responsible for 91 percent of the fatalities, 84 percent of the injuries, and 71 percent of the property damage reported. Table 5-1 breaks down accidents and their consequences by accident type.

Percentage breakdowns of collision, non-collision, and total accidents by accident class are shown in Figure 5-1.

Table 5-1 Accidents, Fatalities, Injuries, and Property Damage By Accident Type								
	COLLISIONS		NON-COLLISIONS		NOT REPORTED		TOTAL	
	#	%	#	%	#	%	#	%
ACCIDENTS								
FATAL	2,417	92.3	197	7.5	5	0.2	2,619	100.0
INJURY	16,195	82.9	3,330	17.0	8	0.0	19,533	99.9
PROPERTY DAMAGE	10,035	73.1	3,687	26.8	11	0.1	13,733	100.0
TOTAL	28,647	79.8	7,214	20.1	24	0.1	35,885	100.0
FATALITIES	3,018	91.2	284	8.6	7	0.2	3,309	100.0
INJURIES	28,896	84.1	5,438	15.8	14	0.0	34,348	99.9
PROPERTY DAMAGE	\$359,337,863	70.8	\$147,658,107	29.1	\$334,415	0.1	\$507,330,385	100.0

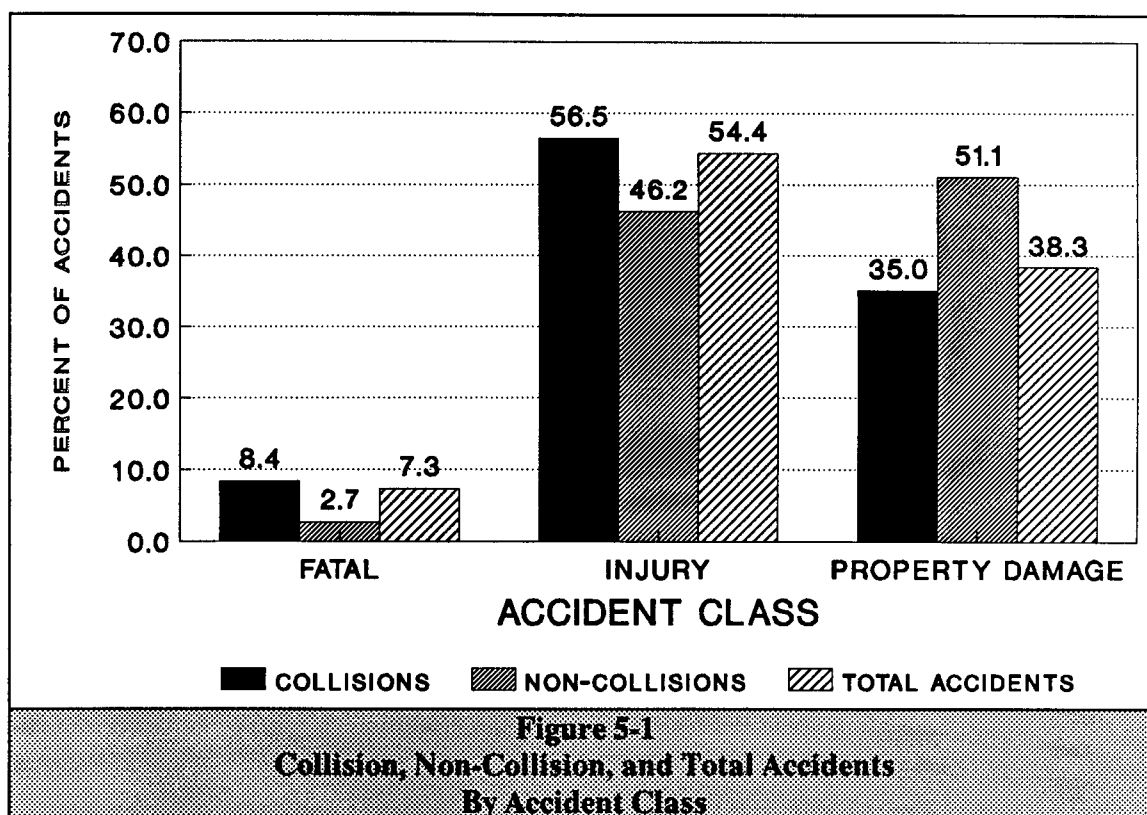


Table 5-2 Accident Consequences By Accident Type			
	FATALITIES #	INJURIES #	PROPERTY DAMAGE \$
PER 100 COLLISION ACCIDENTS	11	101	1,254,365
PER 100 NON-COLLISION ACCIDENTS	4	75	2,046,827
PER 100 ACCIDENTS	9	96	1,413,767

Sixty-five percent of the collision accidents resulted in fatalities or injuries, while only 49 percent of the non-collision accidents were as severe. Collisions were more than three times more likely to result in fatalities, and 22 percent more likely to result in injuries.

Accident severity rates are compared by accident type in Table 5-2. While fatalities and injuries were greater in collisions, the property damage rate was 1.6

times higher in non-collision accidents.

COLLISION ACCIDENTS

Table 5-3 indicates that, in 1990, 62 percent of all collision accidents occurred when commercial vehicles and automobiles collided. In fact, truck/automobile accidents accounted for 66 percent of all collision-induced fatalities, 69 percent of the injuries, and

48 percent of the property damage. Although truck/pedestrian accidents comprised less than 2 percent of all collisions, they resulted in more than 6 percent of

the collision-induced fatalities. Similarly, truck/bus accidents accounted for less than 1 percent of collisions, but nearly 2 percent of the collision-induced injuries.

Table 5-3
Collision Accidents, Fatalities, Injuries, and Property Damage
By Type of Collision

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	\$	%
OTHER OBJECT INVOLVED								
COMMERCIAL TRUCK	4,875	17.0	364	12.1	4,402	15.2	96,954,262	27.0
FIXED OBJECT	3,225	11.3	142	4.7	1,609	5.6	54,346,422	15.1
AUTOMOBILE	17,624	61.5	2,000	66.3	19,969	69.1	173,732,034	48.3
PEDESTRIAN	423	1.5	183	6.1	273	0.9	2,103,075	0.6
BUS	143	0.5	21	0.7	460	1.6	2,017,994	0.6
TRAIN	191	0.7	21	0.7	147	0.5	4,882,550	1.4
BICYCLIST	113	0.4	28	0.9	84	0.3	503,763	0.1
ANIMAL	210	0.7	6	0.2	122	0.4	3,113,046	0.9
MOTORCYCLE	209	0.7	72	2.4	161	0.6	1,196,142	0.3
OTHER	1,559	5.4	175	5.8	1,612	5.6	19,717,793	5.5
OBJECT NOT RPTD.	75	0.3	6	0.2	57	0.2	770,782	0.2
TOTAL	28,647	100.0	3,018	100.1	28,896	100.0	359,337,863	100.0

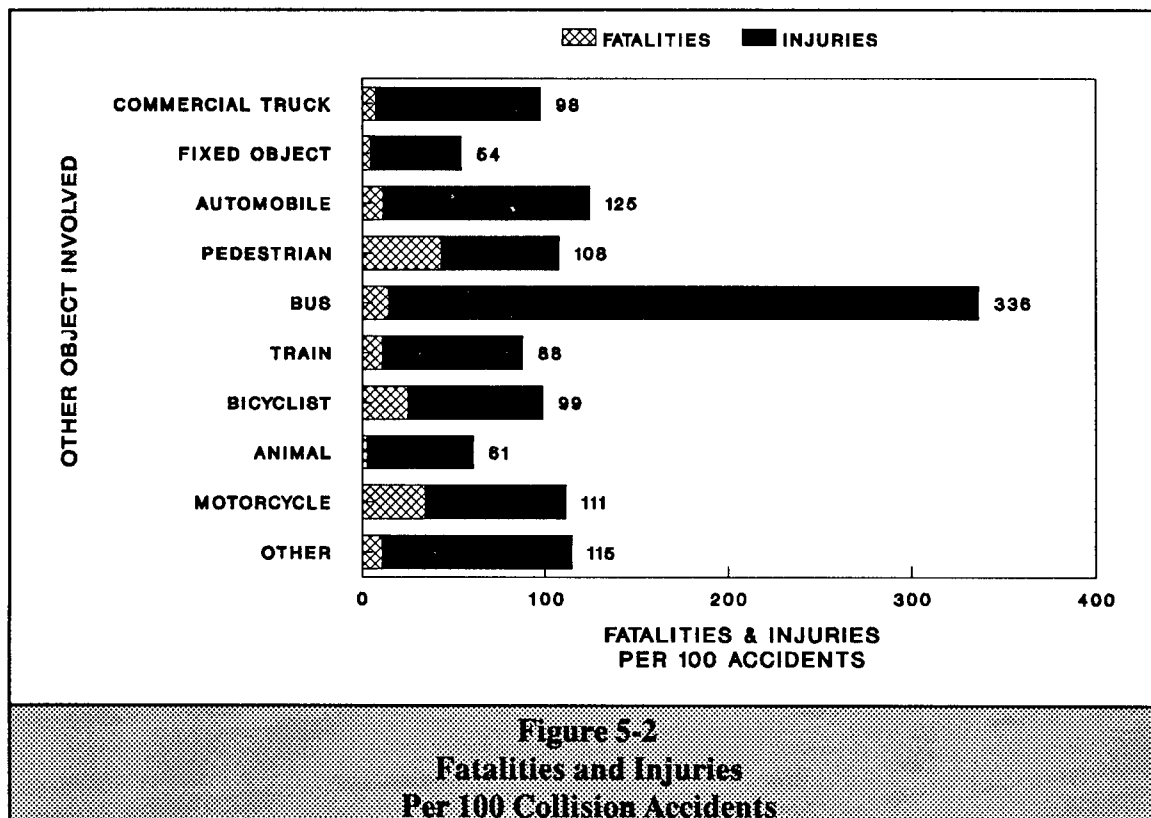
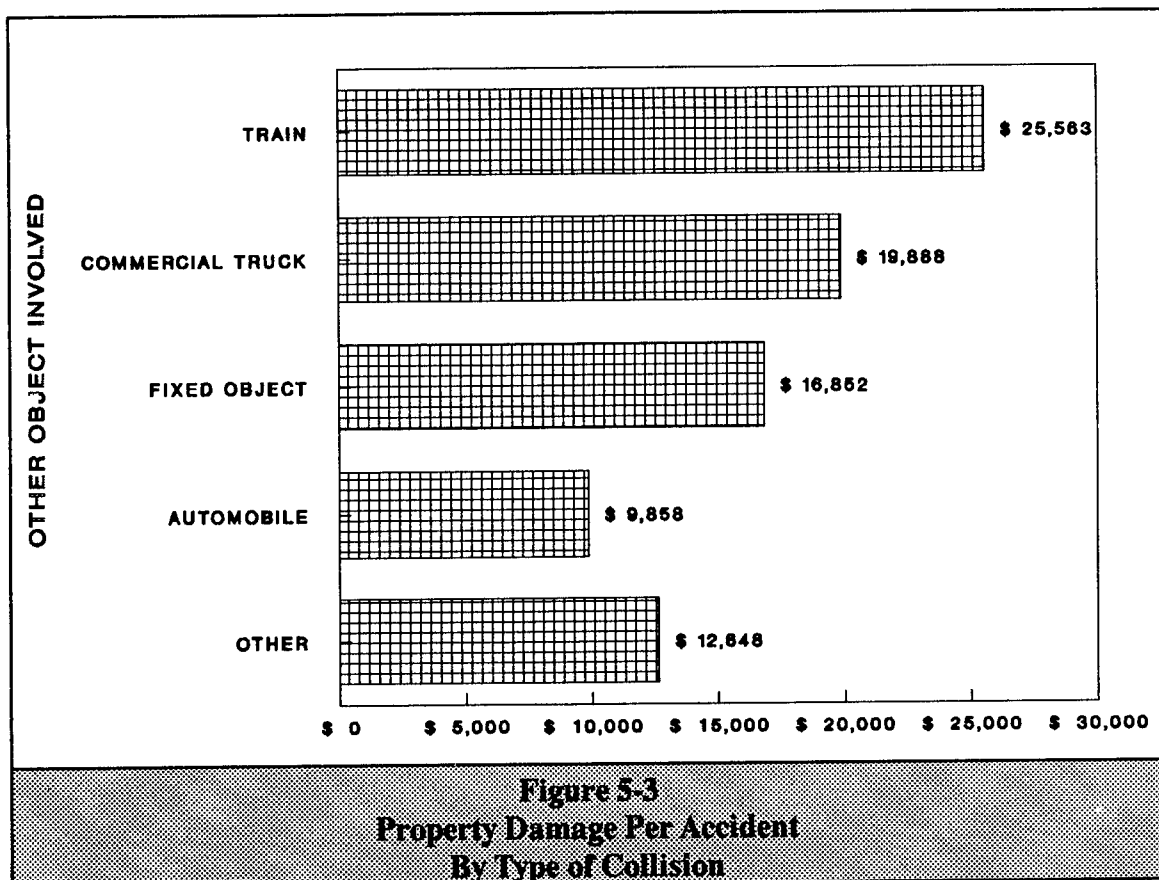


Figure 5-2 examines fatalities/injuries per 100 accidents for collisions involving different combinations of vehicles, persons, and objects. Truck/bus accidents were the most severe, generating 336 fatalities/injuries per 100 accidents. One might reasonably infer that this was due largely to the disproportionately high number of bus passengers potentially exposed whenever truck/bus accidents occurred.

Accidents were frequently the most severe when commercial vehicles collided with pedestrians and other persons not protected inside vehicles. Hence, truck collisions with pedestrians,

bicyclists, and motorcyclists generally resulted in higher rates of fatalities per accident than did truck collisions with other trucks, automobiles, or buses.

The estimated value of property damaged in collisions tended to vary according to the value of the property potentially exposed in each accident. Thus, the average value of property damaged in truck/train collisions was considerably higher than the value of property damaged in truck/truck collisions (Figure 5-3). Similarly, the average value of property damaged in truck/truck collisions was more than that damaged in truck/automobile collisions.



Accident severity by the types of "movement" in which commercial vehicles were engaged just before the collisions occurred is summarized in Figure 5-4. In general, accidents were most severe when the commercial vehicles were reported to have crossed into opposing lanes of traffic. The head-on collision resulting from lane crossings produced, on average, 187 fatalities/injuries per 100 accidents.

In reviewing the data in figure 5-4, note that the vehicle movements shown pertain to the commercial vehicles only; the movements of other vehicles involved in the accidents are not presented.

collision accidents were the result of one of three actions: truck overturns (46.7 percent), trucks running off the road (24.6 percent), and truck jackknifes (14.6 percent). Overturns and trucks running off the road accounted for 4 out of every 5 non-collision fatalities and injuries.

Non-collision accident severity rates ranged from 25 fatalities/injuries per 100 accidents when separation of units was the primary accident event, to 92 fatalities/injuries per 100 accidents when trucks ran off the road (Figure 5-5). Fires were the most costly type of non-collision accident, in terms of property damage, averaging \$28,000 per accident (Figure 5-6).

NON-COLLISION ACCIDENTS

As indicated in Table 5-4, most 1990 non-

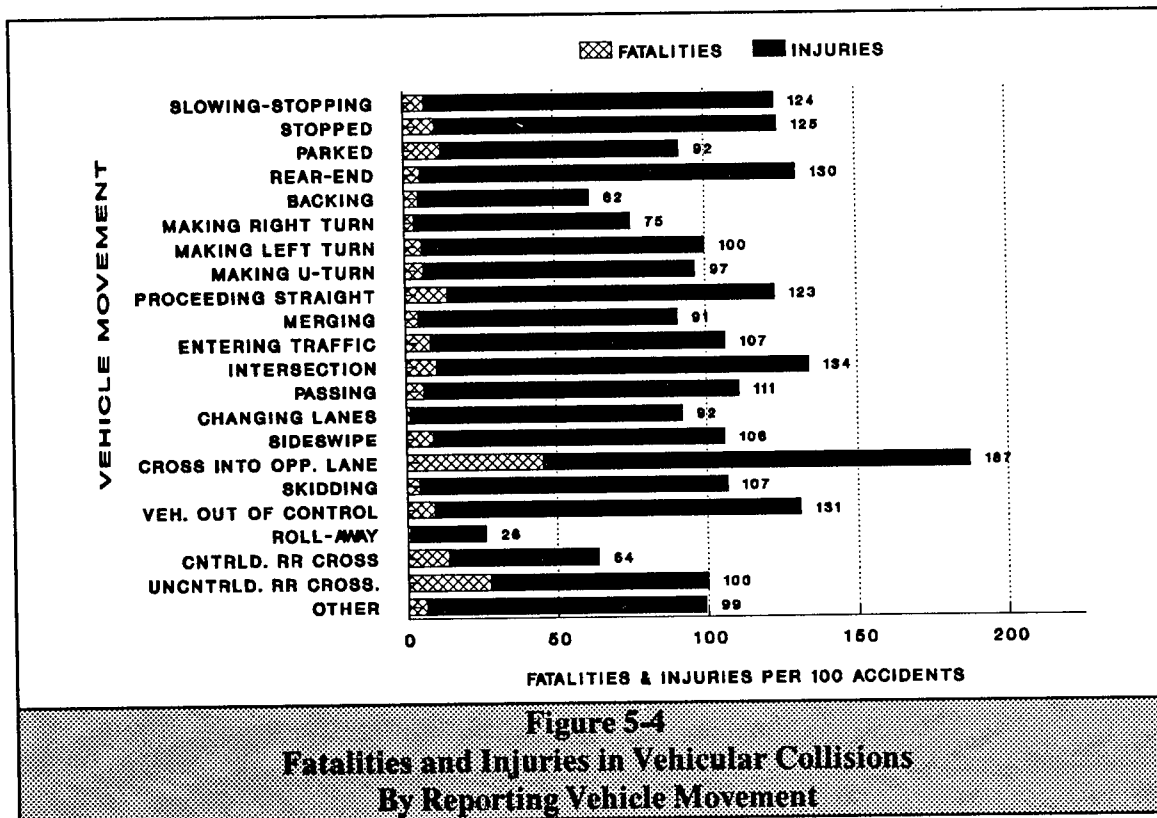
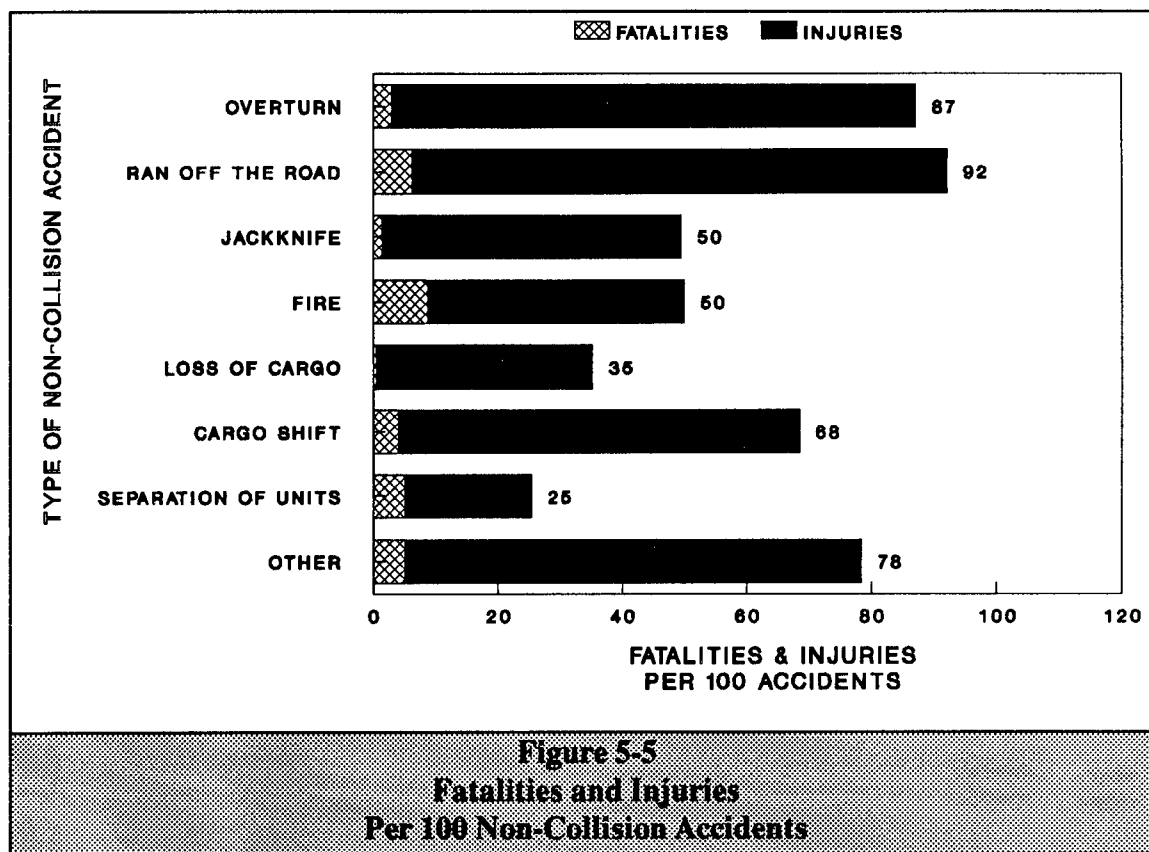
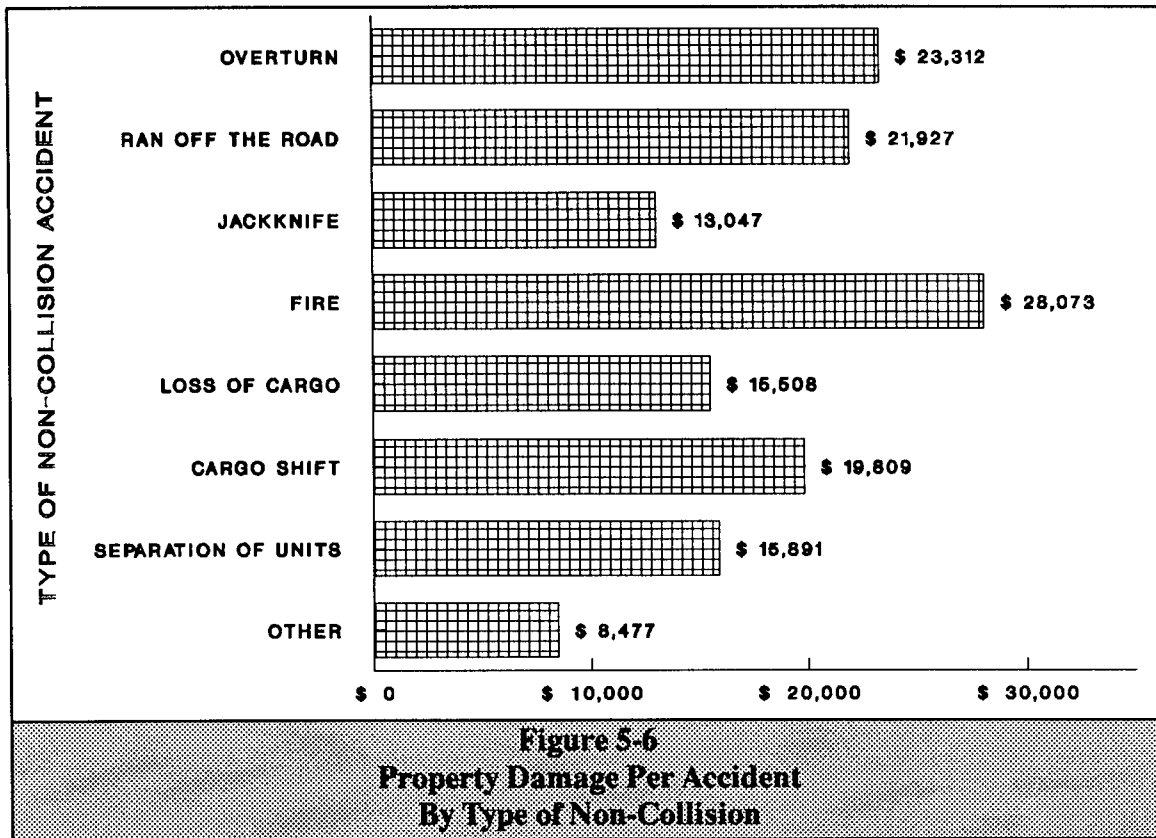


Table 5-4
Non-Collision Accidents, Fatalities, Injuries, and Property Damage
By Type of Non-Collision

TYPE OF NON-COLLISION	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	\$	%
OVERTURN	3,366	46.7	99	34.9	2,834	52.1	78,466,688	53.1
RAN OFF THE ROAD	1,775	24.6	112	39.4	1,523	28.0	38,919,756	26.4
JACKKNIFE	1,050	14.6	16	5.6	504	9.3	13,699,077	9.3
FIRE	216	3.0	19	6.7	89	1.6	6,063,690	4.1
LOSS OF CARGO	202	2.8	1	0.4	70	1.3	3,132,686	2.1
CARGO SHIFT	101	1.4	4	1.4	65	1.2	2,000,683	1.4
SEPARATION OF UNITS	79	1.1	4	1.4	16	0.3	1,255,410	0.9
OTHER	236	3.3	12	4.2	173	3.2	2,000,559	1.4
TYPE NOT RPTD.	189	2.6	17	6.0	164	3.0	2,119,558	1.4
TOTAL	7,214	100.1	284	100.0	5,438	100.0	147,658,107	100.1





APPENDIX

Glossary MCS 50-T Accident Report Form Common Vehicle Configurations

GLOSSARY

Accident Classes. Used to categorize commercial vehicle accidents according to accident severity. The three classes referred to in this report are: fatal accidents, injury accidents, and property damage accidents.

Accident Consequences. The physical results of motor vehicle accidents. Consequences include fatalities, injuries, and property damage.

Accident Severity. Measures the seriousness of an accident according to the type and quantity of the accident's consequences. In this report, fatalities are more severe than injuries, and injuries are more severe than property damage. See also "Fatalities/Injuries."

Accident Type. "Collision" or "non-collision."

Carrier Type. "For-hire" or "private."

Collision Accident. An accident involving a collision between a commercial motor vehicle and another object. Collision objects include trains, other motor vehicles, pedestrians, bicyclists, animals, and fixed objects.

Driveaway-Towaway. Refers to a carrier operation, such as a fleet of tow trucks, used to transport other vehicles, when some or all wheels of the vehicles being transported touch the road surface (49 CFR 390.9).

Fatal Accident. An accident for which at least one fatality was reported.

Fatalities/Injuries. Refers to the average

number of fatalities and injuries which occurred per one hundred accidents. Frequently used in this report as an index of accident severity.

Fatality. A death resulting from a motor vehicle accident.

Fatality Rate. The average number of fatalities which occurred per accident or per one hundred accidents.

50-T Report. Form MCS 50-T, the *Motor Carrier Accident Report (Property-Carrying)*. Commercial carriers subject to the Department of Transportation Act are required to submit a 50-T report to the Federal Highway Administration on each reportable accident in which they are involved.

FMCSRs. *Federal Motor Carrier Safety Regulations*. The FMCSRs are contained in the *Code of Federal Regulations*, Title 49, Chapter III, Subchapter B.

For-Hire Carrier. A commercial motor carrier whose primary business activity is the transportation of property by motor vehicle for compensation.

ICC Authorized Carrier. A for-hire motor carrier engaged in interstate or foreign commerce, subject to economic regulation by the Interstate Commerce Commission.

ICC Exempt Carrier. A for-hire motor carrier transporting commodities or conducting operations not subject to economic regulation by the Interstate Commerce Commission.

Injury. Bodily injury resulting from a motor vehicle accident. To qualify as an

"injury," the injured person must require and receive medical treatment away from the accident scene.

Injury Accident. An accident for which at least one injury, but no fatalities, was reported.

Injury Rate. The average number of non-fatal injuries per accident or per one hundred accidents.

Jackknife. A non-collision accident in which a tractor and its trailer slide together, forming a V-shaped angle of 90 degrees or less.

Local Trip. An intracity or short mileage trip by commercial motor vehicle.

Non-Collision Accident. A motor vehicle accident which does not involve a collision. Non-collision accidents include jackknives, overturns, fires, cargo shifts and spills, and incidents in which trucks run off the road.

Over-the-Road Trip. An intercity movement by commercial motor vehicle.

Private Carrier. A commercial motor carrier whose highway transportation activities are incidental to, and in furtherance of, its primary business activity.

Property Damage. The actual or estimated dollar value of vehicle, cargo, and other property damage incurred in motor vehicle accidents.

Property Damage Accident. An accident for which property damage of \$4,400 or more, but no fatalities or injuries, was reported.

Property Damage Rate. The average amount of property damage per accident or per one hundred accidents.

Property Damage Threshold. The amount of property damage used to determine whether an accident not involving fatalities or injuries is reportable under the *FMCSRs*. In 1989, the property damage threshold was \$4,400.

Reportable Accident. A motor vehicle accident involving a carrier subject to the Department of Transportation Act, which results in a fatality, injury, or property damage of \$4,400 or more (49 CFR 394.3).

Trip Type. "Local" or "over-the-road."

Vehicle Configuration. The combination of vehicular units comprising a commercial motor vehicle. The most common vehicle configurations are depicted on page 50.

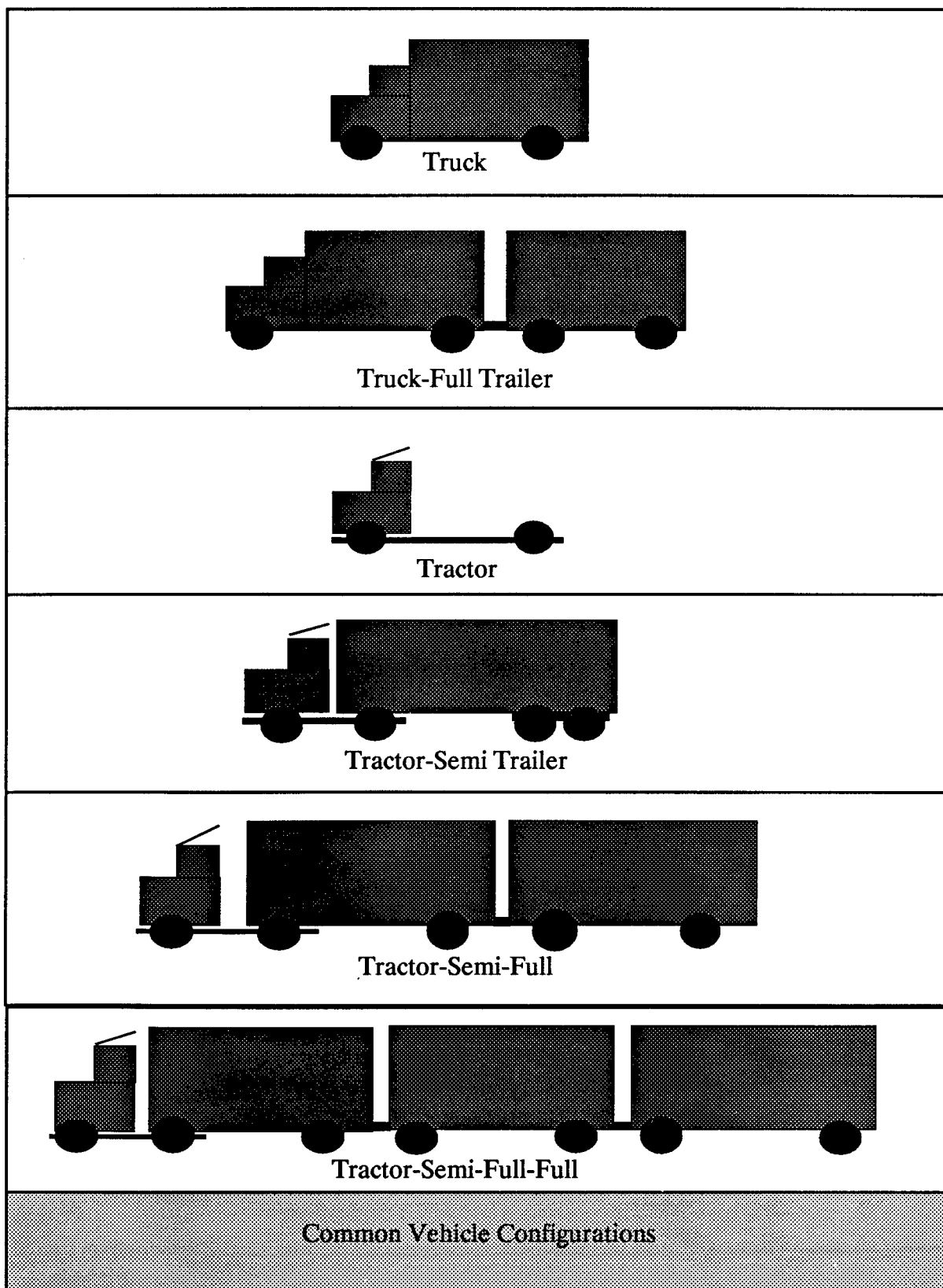
Accidents Reported by Motor Carriers of Property 1990

OMB NO. 2125-0526
(Average completion time for this form is 1 hour)

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION		MOTOR CARRIER ACCIDENT REPORT	
Original and two copies of MCS 50-T shall be filed with the Director, Regional Motor Carrier Safety Office, FHWA, as required by 394.9. Copy shall be retained in carrier's file. Circle or (x) appropriate boxes below.			
1. Name of carrier (Corporate business name)		2. Principal Place of Business (Street & No., City, State, Zip Code)	
3. Type of carrier <input checked="" type="checkbox"/> Private, Employer ID No. (IRS) _____		<input checked="" type="checkbox"/> ICC authorized, MC _____ Employer ID No. (IRS) _____	
4. Type of trip <input checked="" type="checkbox"/> Over-the-road		<input checked="" type="checkbox"/> Local pick-up and delivery operation	
5. Place accident occurred (Nearest Town or City, State)		5A. Type of district <input checked="" type="checkbox"/> Rural <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Primarily business	
6. Street or highway (Route or Name)		6A. Location if off highway	
7. Day of week <input checked="" type="checkbox"/> M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> TH <input type="checkbox"/> F <input type="checkbox"/> S <input type="checkbox"/> S		8. Date accident occurred/...../.....	
9. Time accident occurred (Military time to nearest hour)			
10. ACCIDENT TYPE (Primary Event)			
10A. Collision (Check appropriate box) <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Collision with moving object <input type="checkbox"/> Collision with fixed or parked object			
10B. Collision (Check other object involved) <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Commercial truck <input type="checkbox"/> Fixed object <input type="checkbox"/> Automobile <input type="checkbox"/> Pedestrian <input type="checkbox"/> Bus <input type="checkbox"/> Train <input type="checkbox"/> Bicyclist <input type="checkbox"/> Animal <input type="checkbox"/> Motorcycle <input type="checkbox"/> Other (Specify) _____			
10C. Collision with another vehicle—Accident Classification (Check appropriate box) zzz <input type="checkbox"/> not applicable			
VEHICLES (Your's is #1)		ACTION	
1 2 3		1 2 3	
A		Slowing—Stopping	
B		Stopped	
C		Parked	
D		Rear-ended Other Vehicle	
E		Backing	
F		Making Right Turn	
G		Making Left Turn	
H		Making U-Turn	
I		Proceeding Straight	
J		Merging	
K		Entering Traffic From Shoulder, Median, Parking Strip or Private Drive	
L		Intersection	
M		Passing	
N		Changing Lanes	
O		Sideswipe—Opposite Direction	
P		Head-On—Crossed Into Opposing Lane	
Q		Skidding	
R		Vehicle Out-Of-Control	
S		Unattended Vehicle Rolled Away	
T		Controlled Railroad Crossing	
U		Uncontrolled Railroad Crossing	
V		Other (Specify) _____	
10D. Non-collision (Check primary event) <input type="checkbox"/> Jackknife <input type="checkbox"/> Fire <input type="checkbox"/> Other (Specify) _____			
<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Overturn <input type="checkbox"/> Loss or spillage of cargo <input type="checkbox"/> Cargo shift			
<input type="checkbox"/> Ran off road <input type="checkbox"/> Separation of units			
10E. If not primary event, did accident result in <input type="checkbox"/> Spillage of hazardous cargo <input type="checkbox"/> Spillage of non-hazardous cargo			
<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Fire <input type="checkbox"/> Explosion			
11. DRIVER INFORMATION			
11A. Name of your driver		11B. Age	
11C. Carrier USDOT Number			
11D. How long employed as your driver (To nearest year)			
11E. Hours actually driving since last period of 8 consecutive hours off duty			
<input checked="" type="checkbox"/> 1 hr. <input type="checkbox"/> 3 hrs. <input type="checkbox"/> 5 hrs. <input type="checkbox"/> 7 hrs. <input type="checkbox"/> 9 hrs. <input checked="" type="checkbox"/> 11-12 hrs.			
<input type="checkbox"/> 2 hrs. <input type="checkbox"/> 4 hrs. <input type="checkbox"/> 6 hrs. <input type="checkbox"/> 8 hrs. <input type="checkbox"/> 10 hrs. <input type="checkbox"/> Not applicable			
11F. Anticipated driving time between periods of 8 consecutive hours off duty if accident had not occurred			
<input checked="" type="checkbox"/> 1 hr. <input type="checkbox"/> 3 hrs. <input type="checkbox"/> 5 hrs. <input type="checkbox"/> 7 hrs. <input type="checkbox"/> 9 hrs. <input checked="" type="checkbox"/> 11-12 hrs.			
<input type="checkbox"/> 2 hrs. <input type="checkbox"/> 4 hrs. <input type="checkbox"/> 6 hrs. <input type="checkbox"/> 8 hrs. <input type="checkbox"/> 10 hrs. <input type="checkbox"/> Not applicable			
11G. Condition of driver			
<input checked="" type="checkbox"/> Apparently normal <input type="checkbox"/> Had been drinking <input type="checkbox"/> Medical waiver			
<input type="checkbox"/> Sick <input type="checkbox"/> Dozed at wheel <input type="checkbox"/> Other (Specify) _____			
11H. Date of last medical certificate/...../.....			

Form MCS 50-T (Property-Carrying) (Rev. 8-89) Previous editions of this form are obsolete
(over)

12. CARRIER'S VEHICLE(S)						TYPE OF BODY				
Type	Year	No. of Axles	Make	Model No.	Company No.	Van	Flat	Tank	Auto Carrier	Other (Specify)
A	Truck									
B	Tractor									
C	Semi-trailer									
D	Full trailer									
E	Full trailer (2nd)									
F	Other (Specify) _____									
13. Total length of vehicle/comb. Ft.		13A. Total width of vehicle or cargo Ft.			13B. Weight (cargo) Lbs.			13C. Weight (gross) Lbs.		
14. Type of fuel <input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> L.P.G. <input type="checkbox"/> Other (Specify) _____										
15. Cargo at time of accident (Your vehicle) <input type="checkbox"/> Hazardous materials in cargo (Specify classification) _____ <input type="checkbox"/> Non-hazardous materials in cargo										
16. Check one of the following as principal type of cargo <input type="checkbox"/> General freight <input type="checkbox"/> Motor vehicles <input type="checkbox"/> Liquids in bulk <input type="checkbox"/> Mobile home <input type="checkbox"/> Household goods or uncrated furniture/fixtures <input type="checkbox"/> Driveaway-towaway <input type="checkbox"/> Explosives <input type="checkbox"/> Farm products <input type="checkbox"/> Metal: Coils, sheets, rods, plates, etc. <input type="checkbox"/> Gases in bulk <input type="checkbox"/> Logs, poles, lumber <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Heavy machinery or other large objects <input type="checkbox"/> Solids in bulk <input type="checkbox"/> Empty <input type="checkbox"/> Refrigerated foods										
17. Was your driver killed? <input type="checkbox"/> Yes <input type="checkbox"/> No		17A. Was driver injured? <input type="checkbox"/> Yes <input type="checkbox"/> No		17B. Was your relief driver killed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			17C. Was relief driver injured? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
18. Number of other authorized persons in your vehicle Killed _____ Injured _____				18A. Number of unauthorized persons in your vehicle Killed _____ Injured _____						
19. Total number of other persons killed _____ injured _____				19A. Amount of total property damage in dollars \$ _____						
20. Were mechanical defects or failures apparent on your vehicle at time of accident? <input type="checkbox"/> Yes <input type="checkbox"/> No										
21. Check appropriate boxes (Mechanical defects or failures) <input type="checkbox"/> Not applicable <input type="checkbox"/> Steering system <input type="checkbox"/> Driveline <input type="checkbox"/> Lights <input type="checkbox"/> Fuel system <input type="checkbox"/> Suspension <input type="checkbox"/> Engine <input type="checkbox"/> Coupling <input type="checkbox"/> Wheels and tires <input type="checkbox"/> Transmission <input type="checkbox"/> Brakes <input type="checkbox"/> Other (Specify) _____										
22. Was your vehicle equipped with seat belts? <input type="checkbox"/> Yes <input type="checkbox"/> No										
23. Were seat belts in use by your driver(s) at time of accident? <input type="checkbox"/> Yes <input type="checkbox"/> No										
24. OTHER VEHICLES INVOLVED										
24A. Company name or operator (Vehicle #2)				24B. Address				24C. Type of vehicle		
24D. Company name or operator (Vehicle #3)				24E. Address				24F. Type of vehicle		
25. Weather <input type="checkbox"/> Rain <input type="checkbox"/> Snow <input type="checkbox"/> Cloudy/overcast <input type="checkbox"/> Clear <input type="checkbox"/> Fog/Smog <input type="checkbox"/> Sleet <input type="checkbox"/> Other (Specify) _____				25A. Light <input type="checkbox"/> Day <input type="checkbox"/> Dawn <input type="checkbox"/> Dusk <input type="checkbox"/> Dark <input type="checkbox"/> Artificial lights <input type="checkbox"/> Other (Specify) _____						
26. Road surface <input type="checkbox"/> Dry <input type="checkbox"/> Snowy <input type="checkbox"/> Other <input type="checkbox"/> Wet <input type="checkbox"/> Icy (Specify) _____		26A. Total number of lanes <input type="checkbox"/> One lane <input type="checkbox"/> Three lanes <input type="checkbox"/> Two lanes <input type="checkbox"/> Four or more lanes			26B. Type of highway <input type="checkbox"/> Divided <input type="checkbox"/> Undivided					
26C. Check appropriate box <input type="checkbox"/> Entrance ramp (Expressway) <input type="checkbox"/> Exit ramp (Expressway) <input type="checkbox"/> Not applicable										
27. Account of accident by carrier official (Please type or print clearly.) 										
28. Name and title of person signing report					29. Signature					
30. Telephone Number Area Code					31. Date report submitted/...../.....					



U.S. Department
of Transportation

**Federal Highway
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

Official Business
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